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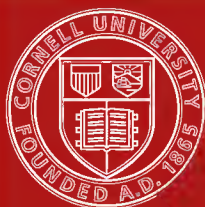
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SCHOOL ADMINISTRATION

including the

Organization and Supervision of Schools

by

John T. Prince, Ph. D.

Author of Courses of Studies and Methods of Teaching; Methods
of Instruction and Organization of the Schools of Germany, etc.



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PREFACE

American conditions do not seem to favor an easy, simple and effective administration of schools. Among the adverse conditions existing in many places are: (1) an overpowering sentiment in favor of local self-government and a strong opposition to centralization of any kind; (2) a non-recognition by the people of the need of professional knowledge and skill in carrying on the schools; (3) a tendency to adopt political methods in the election of school officials as well as in matters of school control; (4) the comparatively short terms of administrative offices and the frequent changes of membership in them; (5) the large extent of sparsely inhabited regions and the consequent difficulties of school attendance and classification; and (6) the difference of financial ability in the various sections of a State and the variety of needs to be met. Such conditions as these are likely to foster mistakes of administration which can be avoided only by the greatest care and effort.

Among the mistakes of school administration actually existing in this country may be mentioned first the tendency of over organization in which the attention of the workers is turned away from the product to the machinery which turns it out. Again there is the other extreme of a lack of organization by which the time and effort of school officials are wasted. But more frequently perhaps than all else is the loose organization by which the duties of school officials overlap one another, frequently resulting in confusion and friction of a serious kind.

In matters of school supervision also there is the same tendency to extremes of practice which exists in

school organization—the over-supervision on the one hand which takes away the original freedom and originality of the teachers, and the absence of supervision on the other which gives an opportunity for teachers to carry out in questionable ways the lowest ends of education and which gives no encouragement or support to teachers who are striving to attain the highest ends.

It is difficulties like these which this book is intended to meet. It is not expected that theories of administration can be applied everywhere exactly as they are here given; but it is hoped that their presentation will be of substantial assistance to members of School Boards, Superintendents and Principals of schools, as well as to professional students of education in Colleges and Normal Schools.

It should be said that many of the recommended plans and outlines are simply a transcript of existing practices. Full credit, however, could not be given in all cases because of the changes in them which were thought desirable to make and because of the fact that in a few instances the authorship was unknown.

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School Organization and Supervision

CHAPTER I

THE NATURE AND SOURCE OF SCHOOL ORGANIZATION

The organs comprising a system of education are the essential means or instruments by which the work of education is done—the organization becoming more and more complex as the system extends in function or in the number of pupils reached. A school of one pupil with one subject of instruction must have its organization no less than a system of many schools with a large number of subjects. The place and means of instruction must be provided even though they be only Garfield's well-known log with a teacher at one end of it. The reach from such an organization to the organization needed for a city system is very great, and yet in these extremes of conditions and in all the intermediate points, a choice of means must be made; and it will be found that that organization is most effective in which each part or organ is best suited to perform its particular function with reference to all other functions and the result to be reached.

The nature and necessity of organization.

The most effective organization.

Before considering the functions of these organs or what the organs should be, it may be

Protection of
schools
against parti-
sanship and
sectarianism.

well to refer briefly to the power which lies behind the organization and which is alike its source and defence. This power is the will of the people as expressed in the constitution and laws of the state. In the constitution there should be a recognition of the necessity of maintaining free schools, and provision should be made to protect them from the debasement of partisanship and sectarianism. The statutes should go further by designating certain conditions and means for the establishment and maintenance of the schools. In the creation of offices and in the authorization of official functions the utmost wisdom is needed. The fostering of the people's interest in the schools and the protection of their rights will warrant the placing of a large measure of power and responsibility directly into their hands and into the hands of local boards.

The adjust-
ment of local
and central au-
thority.

On the other hand the protection of the schools from neglect and mistakes occasioned by indifference or ignorance on the part of those most directly concerned will require some centralization of power, either by restrictive legislation or by the giving of authority to a central board or commission. To what extent general laws should be made in matters of education and how the powers conferred upon local and state authorities should be adjusted are difficult questions and can be determined only by principles of wise government and by a careful consideration of circumstances.

It should be borne in mind that the influence

of illiteracy or of poor schools extends beyond the circle immediately concerned. What affects for ill one part of the state affects to a greater or less extent all other parts. If therefore a large majority of people are desirous of maintaining a high degree of intelligence throughout the state they are justified, in the interests of the state and of all the children in it, in making conditions to which the minority must conform. For this reason the state rightfully establishes a standard of educational opportunity for children which must be met by every town; and lest some of the towns may be too heavily burdened in meeting the requirements, the state should provide for such equalization of taxation as will enable all towns with reasonable effort to comply with the provisions of the law. To carry out these beneficent ends there must be provided by law an organization both of official functions and of material means. Such an organization involves questions of the adjustment of central and local powers which are as difficult of solution as they are important.

Equalization
of educational
opportunity
and taxation.

Among the advantages of influential centralization in education may be mentioned (1) the certainty of maintaining a high standard of excellence in the schools of all parts of the state (2) the prevention of sudden changes of policy due to local jealousies or to the ignorance of local officials (3) needed assistance in determining the curriculum and in making a course of studies (4) the securing of uniformly good attendance of pupils throughout the state.

Advantages
of centraliza-
tion.

Advantages of decentralization.

The advantages of centralization are positive and apparent, but they are no more positive and apparent than are the advantages of giving a large degree of responsibility and power directly to the people or of what is sometimes called decentralization. The chief of these advantages are (1) the encouragement of individual interest and effort in behalf of the schools on the part of the people (2) the ready adaptation of means to the peculiar needs of given localities (3) the opportunity for a healthy and progressive rivalry among communities (4) the stimulus to personal exertion and professional skill on the part of teachers and supervisors.

Constant changes in systems of education.

It is to be expected that the organization of any new system of schools will partake somewhat of the character of existing civil conditions, and that modifications in the direction of centralization or decentralization will be made as the needs and the intelligence of the people demand them. Thus it is that the systems of education in Europe are highly centralized but are changing slowly in the direction of placing the schools in the control of the people. In this country there is a great variety of practice. In some sections the direction and support of the schools are largely under state control, while in other sections a large share of their control and financial support devolves upon the municipality. As might be expected, a constant change is going on in the administration of the schools of all sections—some of the states changing in the direction of local control and support and others

in the direction of centralization. These changes will doubtless go on until a fair balance of general and local control is reached, when, it may be supposed, the forms and conditions of school administration throughout the country will be alike in many important respects.

CHAPTER II

LEGISLATIVE PROVISIONS RESPECTING THE ORGANIZATION OF SCHOOLS

The following brief outline embraces the main features of legislative provisions needed for the establishment of a system of schools in which a large measure of power is given to the people subject to some needed restrictive conditions:

1. The maintenance in every town and city of a sufficient number of elementary schools for all the children of a certain school age and for a given time in the year ; and the maintenance of high schools in cities and large towns.

A sufficient number of schools required by law.

The general requirement of a "sufficient number of schools" seems wiser than that of designating the distance beyond which pupils may not be obliged to walk or ride to school, inasmuch as what might be regarded as a reasonable distance under some conditions would be under other conditions quite unreasonable. A distance limit also might preclude towns from furnishing free conveyance of children to the schools as is provided in several states.*

The term "sufficient number of schools" also has reference to efficiency as well as to con-

* For a statement as to the desirability of consolidating the schools and for suggestions relating to means and method of consolidation, see Appendix C.

Legislative Provisions for Organization of Schools 7

venience. For the protection of the schools it may be found necessary to designate by law a maximum number of pupils for each teacher. Some countries and states have made such a limit, but the number in a few cases has been placed so high as to set a wrong standard for communities which regard the consideration of economy more than that of the children's welfare. In some instances also the legal limit is ignored in practice. It is very important in this as well as in other educational matters that the legal requirements be kept not greatly in advance of public sentiment.

The number of pupils to a teacher.

The time during which schools should be required to be maintained will depend somewhat upon circumstances, but 8 months would seem to be the least time for which any state should require the schools to be kept in the year. Similiar reasons for an indefiniteness of statement may be urged respecting the legal period of compulsory school attendance. A reasonable regard for the welfare of the children however would warrant the state's requiring 6 years at least of attendance upon the schools all the time they are in session.*

The time requirement of school maintenance.

* The compulsory school attendance laws vary considerably in the United States. In most of the 30 states having compulsory laws children from 8 to 14 years of age are required to attend school for 12, 16 or 20 weeks during each year. In some of the states the required time for school attendance is greater--thus in Colorado, Pennsylvania, Connecticut, New Hampshire, and Minnesota the required time for school attend-

High schools
to be estab-
lished by law.

In addition to the requirements respecting elementary schools, there should be provision made by law for the establishment of high schools. That such schools should be free and within reach of all the children in a republic like ours is coming to be regarded as wise and, for many parts of the country, as feasible. They may be required to be maintained in certain accessible centres or they may be required in all cities and in towns of a given size. The studies required to be taught may be designated or there may be a provision that the schools shall prepare pupils for entrance to college or the higher technical schools.*

ance is from 8 to 16 years of age with some exceptions during the last 2 years. In Massachusetts and New York children of compulsory age are required to attend school all the time the schools are in session and the schools must be in session 32 weeks. In Germany children are, with some limitations, obliged to attend school for 7 and 8 years after the age of 6. In France the compulsory age is from 6 to 13, and in England it is from 5 to 14. For further details respecting school attendance in this and foreign countries see Hughes's "The Making of Citizens", pp. 134-141.

* In Massachusetts such high schools are required to be maintained in all cities and towns containing 500 families, and provision is made for the children of other towns to attend some high school at the expense either of the town in which they live or of the state.

Several of the central and western states have provided by law for county high schools to be

2. *The maintenance of schools for the care and education of habitual school absentees, of juvenile offenders, and of abnormal or defective children who cannot be cared for in the ordinary public schools.*

Compulsory school attendance implies an obligation on the part of the state to make suitable provision for habitual violators of the law, either by placing the absentees in good homes or by establishing truant or parental schools. These schools should be situated in convenient localities and be under the control and care of the state.*

The maintenance of special schools for school absentees.

Other schools should be established for those morally delinquent and physically defective children who cannot be educated in the ordinary

supported and controlled by the county. In New York tuition in high schools of non-resident pupils from schools not maintaining an academic department is paid by the state, at the rate of \$20 for 32 weeks. In Nebraska the law permits pupils of country towns to attend an existing high school and provides for tuition fees at fixed rates to be paid by the county in which they reside. In Minnesota state aid is given to city high schools, approved by state educational authorities upon condition of providing free tuition. For information relating to free high schools for rural pupils see report of the Commissioner of Education for 1899-1900, p. 643.

* There seem to be good reasons for keeping all reformatory and penal institutions in the care of the state. Possible exceptions may be those institutions which are supported by large cities mainly for their own benefit. In any case they should be in charge of unpaid boards or commissions, with paid executive agents.

Schools of re-formation and special schools for defectives.

public schools, such as juvenile offenders, blind, deaf, and feeble-minded. Attendance at these schools, as in the case of normal children, should be compulsory for all children of a certain age whose education is not otherwise provided for. Such schools should be entirely separate from truant schools and from the ordinary public schools, and should be so organized and conducted that the fullest benefits to all concerned may be secured.*

3. The establishment of a state board of education and the designation of its powers and duties.

The function of state board of education advisory.

The powers and duties devolving upon the state board should be very general so far as its administration of the schools is concerned. In all matters pertaining to the direct management of the schools its function should be mainly advisory rather than directive. Through its executive officers it should lead and guide the educational sentiment of the state and be ready to shape such legislation as will be needed to promote the greatest efficiency of effort in behalf of the schools.†

In the composition of the state board, as well as in the method by which its members are selected, much latitude may be given in the statute

* A fuller treatment of this subject will be found in Chapter VI, under the heading of "Special Schools and Classes"—also in Appendix E.

† For details respecting the duties of the state board of education and its executive officers see Chapter III.

requirements. The desirability of having the affairs of education removed as far as possible from politics would favor the appointment of members by the governor rather than election by the legislature or people. And to secure the needed knowledge and continuity of service, the term of office of members should be at least four years in length. If the board has, as it should have, executive officers who act as experts in educational matters, it need not and perhaps should not be composed of professional teachers. This restriction will be especially apparent in the case of teachers in institutions which are under the charge of the board. There are good reasons for having upon the board one or more members of the state executive department. The number of appointed members should be small, perhaps not more than five. Better attendance at meetings will be secured and a greater degree of responsibility will be felt in a small board than in a large one.*

Membership of
state board
and term of
office.

* In Prussia and other states of Germany the general board consists of skilled men to whom large powers are given. They are appointed by the minister of instruction, who is a member of the government. In France the general board or council also consists of educational leaders endowed with large powers; they are variously appointed, some by the president of the Republic and some by officials of educational institutions. In the composition of state boards in this country there is a great variety of practice, some of the boards consisting chiefly or wholly of professional teachers, some of designated officials, and some of all classes of citizens. In

4. *The establishment of a local board for each town and city, with some provision to meet the needs of country districts or small towns.*

The question of organization respecting the local school boards has mainly to do with the manner of selection, number of members, and term of office of members.

First as to the selection of members. Shall they be elected by the people, by the city or town council, or by the executive? No doubt has been raised in this country either in practice or in theory as to the advisability of the popular

states where members of the board are not designated by law, they are either elected for a term of years by the general assembly or appointed by the governor. In Michigan 3 members are elected by the people. In New York all state education is in the hands of a board of regents of the University of the State of New York, consisting of 11 members elected by the legislature on joint ballot, each for a term of 11 years, one retiring each year. The following examples serve as types of practice followed in the various states:

Indiana: Board composed of governor, state superintendent, president of state university, president of Purdue university, president of state normal school, and superintendents of the three largest cities of the state.

Massachusetts: Board composed of governor, lieutenant-governor, and 8 persons appointed by the governor, one retiring each year.

Connecticut: Board composed of the governor, lieutenant-governor, and 4 persons elected by the general assembly.

election of members in rural communities or small towns. But the arguments in favor of popular elections in such communities are equally strong in all. The public schools are the schools of the public, that is of the people; and the people should be trusted in the control of their schools to the extent at least of electing proper persons to manage them. For special reasons the administrative board should be given large powers—in fact almost unlimited powers in all questions of management. The largeness of their powers and the direct interest the people have in the schools will induce the people to make a careful selection. While in some communities there may be possible dangers attending a popular election of members, the dangers in the long run of taking it out of the hands of the people and of placing it in the hands of a single person or commission are far more likely to be realized.

Members of local school boards to be elected by the people.

The tendency in recent years to reduce the number of members of the board and increase their term of service is noticeable. A board of 3, 5, or 7 persons is likely to represent the best sentiment of the community quite as well as a larger one. Moreover the members of a small board are likely to be more carefully selected than those of a large one.

Small boards desirable.

The responsible and intricate duties of local school boards render it advisable to make the term of service for which members are elected a long one. Three years is not too long a time for members to acquire a good knowledge of the needs of the schools and of the means of meeting

The term of
service of
school boards.

them. It seems also advisable that the terms of service of the members shall not expire at the same time. It would be well for the length of the term and the time of election to be such as will oblige only a third of the members to retire in any one year. By this plan at least three years would be required to effect an entire change of membership by ordinary elections. A further provision should be made that no teacher shall be eligible for membership on any school board which elects him to his position as teacher or which fixes his salary.

Eligibility of
members.

The organiza-
tion of county
boards.

To meet the needs of rural schools where the county is the unit area of organization, laws should be passed enabling them to have privileges as nearly equal to those of villages and cities as possible. Provision for the election of a county board should be made which shall have jurisdiction over all the schools of the county. This board may be elected and organized in a manner similar to that of the town boards already alluded to, and it may have essentially the same duties.*

5. Provision for the appointment of such officers and teachers as will be needed to secure regular attendance of children upon the schools, to insure the health of the pupils, and to raise the schools to the highest possible degree of efficiency.

Compulsory laws of school attendance presuppose the existence of the means of their execution. Chief among these means are properly

* For the details of a possible plan of county organization for the supervision of schools see Chapter IV. Also Appendix B.

appointed attendance officers to look after those pupils who are, without good reason, absent from school. In addition to attendance officers appointed by local boards there should be one or more state attendance officers appointed by the state board of education whose duty will be to see that the compulsory attendance laws are enforced. This will be especially needed in country districts where the obstacles to the enforcement of attendance laws are the greatest.

Local and state attendance officers to be appointed.

The practice which prevails in many cities of appointing health officers for schools should be extended so as to include by law all the schools of the state. It should be required of the school board in every city and town to appoint one or more health officers whose duty will be to inspect the physical condition of the pupils and to provide not only for the prevention of disease but also for the promotion of health among them.

Health officers to be appointed.

Such provision should be made by law as will insure for all the schools the best possible service both in teaching and in supervision. A minimum of qualifications for teachers should be designated by the state board of education, and provision should be made whereby each local board in making a selection of teachers may select from candidates only those whose character and ability are unquestioned.

A minimum of qualifications of teachers to be designated.

The school board of each city and large town should be required to elect a superintendent of schools, of given scholastic and professional qualifications. For the smaller towns district supervision which has worked so well in some states

Skilled superintendents of schools to be elected.

might well be made a requirement of statute law. The essential features of such a plan might be as follows :

School super-
vision in small
towns.

(1) Two or more towns to unite for purposes of supervision, the valuation of each town not to exceed a certain sum and the aggregate number of schools in all the towns to be within given limits.

(2) The formation of district limits to be made by the state board of education.

(3) The superintendent to be elected by the combined boards in such a way as to protect the interests of each town and with designated limitations of choice.

(4) Provision for such aid from the state as will be needed to pay the superintendent's salary.

County super-
intendents.

In states where the district plan of supervision is not feasible, one or more county superintendents should be appointed by the county board, with certain limitations as to number of schools, qualifications, etc.*

6. The designation of subjects to be taught in the schools.

Subjects of
study to be
designated by
law.

The required subjects to be taught in the elementary schools should be language (including reading, spelling, penmanship, composition, writing and English grammar), arithmetic, geography, elementary science, physiology and hygiene. School boards should be free to provide for the teaching of any subject not required to be taught,

* For possible plans of district and county supervision see Chapter V and Appendix B.

but certain desirable subjects may be named in the law as optional, such as geometry, algebra, industrial training and a foreign language.*

In the law for the establishment of high schools there should be provisions which will insure a certain degree of efficiency. These provisions may include fitness of teachers, subjects of instruction, and length of course.†

Provisions for high schools.

7. Provision for the financial support of the schools.

There is no part of school legislation more difficult to formulate than that relating to taxation for the support of schools, especially in states where the wealth is unequally distributed and where other conditions of school maintenance are widely different. Not only is the matter of equalization of taxation to be considered, but the question of how far local support of the

Difficulties in taxation for schools.

* For details concerning the curriculum in this and foreign countries see Chapter VI and Appendix G.

† In the Massachusetts high schools, teachers of "competent ability and good morals" are required to give instruction in such subjects "as may be required for the general purpose of training and culture as well as for the purpose of preparing pupils for admission to state normal schools, technical schools, and colleges." These schools are required to maintain one or more courses of study at least 4 years in length 40 weeks in each year. The requirement to maintain high schools is made of all cities and towns having 500 families. Towns having fewer than 500 families are to permit qualified pupils to attend high schools in other towns, the tuition for the same to be paid in whole or part by the state.

schools is necessary to a proper public spirit in relation to education and to the prevention of a weakening dependence upon the state on account of benefits received.

Two methods
of distributing
school funds.

General laws of taxation for the support of schools and distribution of funds are found to proceed either from the municipality to the state or *vice versa*. For example the law may provide as it does in some states that a certain sum per pupil or per school shall be raised by local taxation, with the understanding that the balance needed for the support of the schools shall be drawn either from an established fund or from funds raised by general or state tax. Or as in other states the law may provide that each municipality shall receive a certain sum per pupil or per teacher from the state with the understanding that the balance needed shall be raised by local taxation.

Again, it is assumed in some states that the more wealthy municipalities while sharing in the general or state tax are not in need of aid and therefore ought not to receive any return whatever from the state; that is, these cities and towns provide means not only for the support of their own schools but also in some degree for the support of the schools in other and less favored localities.

Importance of
local taxation
for support of
schools.

Whatever scheme of state assistance is adopted, the importance of local taxation for the support of schools should be considered. The moral support which a community gives to the schools will be largely measured by the financial support

it gives. Where schools are wholly or largely supported by local taxation, there will be found a strong public interest and pride in the schools whatever their real merit may be.

It is true that in many countries like Germany where education is supported largely by the state good schools abound. Indeed it may be said that the schools are likely to be more uniformly good in such countries and states than in countries and states which force each community to support its schools; but in a country like ours founded upon the idea of local self government it is fitting that the central treasury shall be used only when the given locality becomes unable to maintain the standard necessary for the good of all. In the long run too it is probable that the schools of a country will be best whose support as well as control is largely in the hands of those who are directly benefited.

In any plan of local taxation for either the entire or partial support of schools there is likely to be some inequality in the burden assumed. If it is assumed, as it should be, that all the children of a state ought to have as far as possible equal opportunities, it must be admitted that the burden of support ought to be uniform so far as it can be made so throughout the state. The most just and equitable plan would be for a special commission to give careful consideration to the conditions and needs of every city and town, and to provide that each municipality pay toward the support of its schools a sum in proportion to its ability to pay and with reference to its other

Equalization
of taxation
needed.

needs, the state paying the balance needed to bring the schools up to the required standard. Even this plan could not be carried out without difficulty; for whatever adjustments the commission might make, they would be subject to criticism by jealous communities.

CHAPTER III

STATE ADMINISTRATION OF SCHOOLS

The laws of a state relating to the establishment and maintenance of public schools must be administered by designated boards or officials. As has been said the most orderly method of administration is through boards as far removed as possible from the influence of politics. The work of these boards of administration may be classed as legislative, executive, and supervisory; legislative, in establishing schools and providing for their maintenance by directions and rules governing the duties of all concerned in the management of the schools; executive, in carrying into effect the directions and rules of legislation; and supervisory, in overseeing, advising, and directing the work of the schools.

The duties of local school boards.

In a certain sense the schools may be said to be town or city schools, but in reality they are state schools so long as they are established and maintained under the laws of the state. For the purpose of securing the direct interest of the people, a large measure of the responsibility for maintaining good schools should rest upon the municipality. While there should be little centralized authority in the state, there are some functions which can best be performed by a general or state board of education, assisted by such executive and supervisory officers as may be needed.

Functions of local and state administration.

Present duties
of state boards
of education

State board of education.--Among the duties now devolving upon state boards of education in this country may be named the following:

(1) having general charge of educational interests in the state

(2) appointing the state superintendent of schools

(3) appointing county superintendents of schools

(4) having charge of state normal schools

(5) prescribing course of studies for the public schools

(6) granting licenses to teachers

(7) prescribing text-books

(8) recommending text-books and reference books

(9) settling controversies between school officers

(10) having control of state funds

(11) commissioning high schools to send pupils to the state university

(12) preparing blank forms for the use of towns

(13) hearing appeals.

The duties as outlined above may be divided broadly into two classes, those that are general and those that are special and technical. Another and closer view of the prescribed duties shows that to some boards are given judicial and legislative functions, while others have only supervisory or advisory duties to perform.

Reasons for
and against
centralization.

If it is assumed that local boards cannot wisely control such matters as the selection of text-books, making courses of studies, and the

licensing of teachers, or if a full and prompt enforcement of the laws cannot be secured by the local authorities, or again if centralized authority in respect to the securing of high standards of education is more to be trusted than the direct will of the people, then a large measure of authority and close direction or supervision of the duties named should be exercised by the state board. But these assumptions cannot be fairly made. Certainly the principle should not be maintained in a republic that the people in either educational or political affairs cannot be trusted. It is true that the people themselves may decide that, for certain reasons, some measure of centralization in educational affairs should be maintained, as in the designation of a certain standard of proficiency in the maintenance of schools. The question is how far this centralization of power should go.

The following statement of powers and duties of a state board may fairly represent the medium of two kinds of practice in this country. It is an attempt also to show what prerogatives may be exercised by the state board in its assistance of city and town boards without unduly impairing their responsibility and authority.*

The proper powers and duties of a state board of education.

* The two states which represent the extremes of power given to the state board of education and its chief executive officers are perhaps California and Massachusetts. In California the state board

(a) adopts rules and regulations for the government of the public schools

1. Full control of the normal schools and other educational institutions supported wholly by the state.

Full control of
state educa-
tional institu-
tions.

The function of the normal school is to train teachers needed for service in the public schools. Owing to the peculiar service that the teachers render the state and to the small remuneration that they receive compared with members of other professions, it is the custom generally for the state to furnish free tuition to all normal school students. To direct the expenditure of money thus involved and to establish in a certain way the kind of qualifications needed for teachers of the public schools are functions which naturally fall upon the state board of education.

“Other educational institutions” referred to as properly subject to the control of the state board are the schools for the blind, deaf and dumb, feeble-minded, etc. Also schools for juvenile offenders and truant schools.

(b) makes rules and establishes a standard of proficiency for the examination of teachers

(c) prescribes course of study and text-books

(d) grants life licenses to teachers on recommendation of the board of education and may revoke the same.

In Massachusetts but little direct authority is given to the state board beyond having full charge of the normal schools, holding in trust gifts and bequests made for educational purposes, prescribing the form of school registers and returns, holding teachers institutes, and certifying superintendents of union districts.

2. *A partial or advisory control of all educational institutions supported in part by the state.*

This provision applies to private institutions in which the education of children and adults is carried on at the expense of the state, such as normal schools, reformatories, and schools for defectives. The form in which the control is effected should depend upon circumstances. In some cases one or more persons appointed by the board of education might serve upon the board of managers. In other cases the state's interests might be best served by inspection and reports made by one or more of the executive officials of the board of education.

Partial control of private educational institutions.

3. *The designation of a minimum of qualifications for all the teachers of the public schools.*

If it is true as has been affirmed that "what affects for ill one part of the state affects to a greater or less extent all other parts," and if there is general indifference or unwillingness in some portions of the state to provide good teachers, then there should be fixed a minimum of qualifications for all the teachers of the state. There are some good reasons why a minimum of qualifications should be established by the state board of education rather than by statute law. In the first place the standard of qualifications when set by a board is likely to be higher than when determined by law. Moreover adaptation to the changing needs of given communities may be made to a greater degree by a board than by a legislature.

A minimum of teacher's qualifications to be designated.

There are two ways of fixing the qualifica-

tions of teachers (1) by setting forth what the qualifications shall be, as for example graduation from certain institutions; (2) by examining all candidates and decreeing that all teachers selected by towns and cities must have received a certificate of one or another grade.*

4. *Nomination of county or district superintendents of schools who are supported in full or in part by the state.*

Nomination of
county and dis-
trict superin-
tendents.

Experience has shown that in the election of superintendents as well as in the election of teachers some restrictions should be put upon the action of the local boards which elect. This restriction is especially needed when the salary of the superintendent, in whole or in part, is paid by the state. For each vacancy in the office of such superintendent the state board may be required to make one or more nominations for the action of the local board, or the election may be made from a general list of candidates approved by the state board.†

* In many of the states teachers are required to pass a state or county examination, but in nearly every case the standard set is quite too low; so low that it is not a difficult matter for teachers to secure positions on other grounds than those of merit. In Massachusetts local certificates only are required; but in this state more than two-thirds of the teachers of elementary schools have been professionally trained either in a state normal school or in a city training school. About the same proportion of secondary school teachers are college graduates.

† In New Jersey, Mississippi, and Virginia the county superintendent is appointed by the state

5. *The appointment of one or more state attendance officers who shall act in conjunction with local officials in enforcing school attendance laws.*

In many places doubtless the local attendance or truant officers may be trusted to enforce the school attendance laws of the state; but there are some places of which that cannot be said. Even in the law-abiding towns there are likely to exist circumstances in which the local officers need the support and co-operation of a state official who can act independent of local considerations.

Appointment
of state attendance
officers.

6. *The making and sending out of school registers and other statistical blanks so as to secure a uniform basis of statistics.*

The need of uniformity in the making of statistics is unquestioned, and this can be gained only by the use of uniform blanks throughout the state. The information called for should be limited to the needs of those who desire to make a comparison of conditions upon which the wel-

Preparation of
statistical
blanks.

board of education. In most states the office is elective, with meagre educational prerequisites to eligibility.

In Massachusetts the superintendents of union districts are elected by a joint committee of local boards, but their qualifications are determined by the state board of education.

In New York the school commissioners, who correspond to the county superintendents of other states and whose salaries are paid by the state, are elected by the people, without restriction as to qualification, and hence the office is often regarded as a political gift.

fare of the schools depends. It would be well if a common form of statistics could be agreed upon for the entire country. In another place will be found an outline of school statistics carefully prepared by a committee of the National Educational association.*

7. The rendering of a report to the legislature respecting the condition and needs of the public schools of the state and of all other educational institutions supported in full or in part by the state.

Report to legislature.

Such a report should contain tables of statistics gathered from the various towns and cities, together with such comparisons and comments as will be both suggestive and helpful to all concerned in the welfare of the schools. It should also contain reports of inspectors and others authorized to give actual educational conditions and results.

8. The awakening of a strong public sentiment among the people in favor of popular education and the rendering of wise counsel in maintaining the schools on a high standard of excellence.

The awakening of public interest in education.

The history of education in this country shows the futility of making laws that are not supported by public opinion. It can be shown also by experience that the welfare of the schools is directly promoted by an enlightened public sentiment as to the purposes and means of education.

9. The appointment of a chief executive officer and such assistants as are needed to carry out the policy of the board.

* Appendix D.

The board of education should be an unpaid board, and its members cannot therefore be expected to give more time to their duties than will be needed for legislation. The executive details and the settlement of questions directly relating to teaching must be in the hands of persons whose time is given wholly to this work.

The appointment of executive officers.

State superintendent of schools — Much of what may be said in relation to the mode of appointment, term of service, and duties of a state superintendent has already been referred to. The reasons named for removing the appointment and functions of the state board of education as far as possible from the influence of politics are even more potent in relation to the executive officer of the board. It is plainly unwise to make the office a foot-ball for politicians, either in a popular election or in an election by the legislature. As has been said he should be appointed by the board, and, since it is wise to separate the legislative and executive functions of the board, he should not be a member of it. His term of service should be sufficiently long to enable him to acquire wisdom in the formulation and carrying out of plans, and his tenure of office should be so secure as to make him free and independent in the discharge of his duties. After a trial service of a definite term he should be elected during the pleasure of the board.

The state superintendent an appointed official.

The superintendent's term and tenure of office.

His duties may be inferred from the duties already enumerated as belonging to the board. Such of these duties as need careful direction or professional knowledge will be performed by

him. In general it may be said that all the details of functions belonging to the board are to be performed either by the superintendent directly or under his direction—the duty of the board being chiefly to pass upon the acts of the superintendent.

He should be a man of liberal education and large experience as an educator and have a strong and exalted personality. Such assistance should be afforded him in his executive and clerical duties as will give him the largest opportunity to impress upon the schools of the state his ideas of what they should be. This he will do by attendance upon and participation in county and other educational meetings, by educational addresses before the people, by teachers' institutes, in which the aid of the most advanced lecturers and instructors is had, by advice to local school boards and superintendents in their work, and by visits to the state normal schools.

In all this work he should be aided by able assistants who will act with him under the direction of the board.

Besides advising the state board in respect to its action as a board and carrying out its requirements in relation to all state educational institutions, he has constantly to act in directing and regulating matters relating to the school census, registers, etc., in tabulating and reporting the results of official inquirers, in advising the legislature as to the making of new laws and the changing of old ones, in answering personally and by letter inquiries in relation to the inter-

Powers and duties of the state superintendent.

pretation and enforcement of school laws, in attending and addressing educational meetings, and in arousing among the people by addresses and reports a public sentiment in favor of the schools. If it is found advisable to provide for the state examination and certification of teachers, that duty so far as direction is concerned must devolve upon him, or upon some one appointed for the purpose.*

* The present system of New York is in this respect noteworthy. The non-political and permanent board of regents (see page 12) elects as its executive officer a commissioner of education for a term of 6 years with a salary of \$9,000. He appoints three assistant commissioners with salaries of \$5,000 and heads of departments at salaries of \$3,000 to \$4,000, subject to the approval of the board of regents. These assistant commissioners and heads of departments appoint their subordinates subject to the approval of the commissioner. Thus each officer has permanent appointment, with all needed power and responsibility.

CHAPTER IV

CITY AND TOWN ADMINISTRATION OF SCHOOLS

The organization of a model system of schools rests upon the assumption that the most active, direct, and responsible management must be local rather than centralized. To each city and town belongs the duty of keeping the schools up to as high a degree of excellence as possible, and this must be done not directly by the people but by persons duly elected for the purpose.

Two distinct
classes of du-
ties in school
administration

The local school board.—The definition of general administrative functions given elsewhere* may be applied with special force to the duties of local boards. These legislative, executive, and supervisory functions belong to two quite different and distinct classes of duties—one class relating to financial and other business matters and the other class having to do with matters which, because of their technical character, may be called professional. For the good of the schools it is very important that there be a wise designation of duties among all who are employed in their service. This may be secured by carefully drawn rules stating what duties shall be performed by the board collectively, what by individual members or sub-committees of the board, and what by appointed officials.

* Page 21.

The wisdom of a separation of functions in civil government is unquestioned. This separation seems all the more imperative when the duties involved are as technical as some of the duties of school administration are. The exact line of separation is doubtless difficult to define in some cases, but in general it may be said that the board should have general charge and supervision of the schools, and that upon it as a board must rest the responsibility of making such provisions as will give a reasonable assurance of good results.

Before an attempt is made to determine what duties if any the school board shall have outside of the general legislative duties already mentioned, it may be well to point out in detail the duties which must be performed in efficiently carrying on the work of the schools; these necessary duties are

- (1) keeping in repair the school buildings
- (2) providing for adequate ventilation and lighting of the school-rooms
- (3) purchasing of fuel
- (4) purchasing and keeping in repair the school furniture
- (5) caring for the school-rooms and grounds
- (6) selecting and purchasing the needed apparatus
- (7) selecting and purchasing the needed textbooks and reference books
- (8) making a course of studies
- (9) appointing truant officers and otherwise

The duties of school administration outlined.

providing for an enforcement of the law relating to school attendance

(10) appointing the teachers

(11) inspecting and directing the work of the teachers

(12) classifying and promoting the pupils

(13) making statistical and other reports to the state board of education and to the citizens of the town or city.

Needed limitations of the powers of school boards.

In determining which if any of the details of these duties may be performed directly by the board, two limitations naturally present themselves: first, that of a lack of time which members can give to minute supervisory and executive duties; and, secondly, that of inability to perform those duties which require professional knowledge and skill. It must be assumed that the chief attention and time of members must be given to their vocation, whatever it is, and that only such scraps of time may be given to their official duties as can be spared from the farm, factory, or counting-room. It is of course conceivable for members to be employed in some of the executive details of school administration, such as janitor service, repairing buildings, and purchasing supplies. But even in this service the questionableness of having a member or sub-committee serve as both principal and agent will readily appear, especially if compensation is received for service rendered.

The second limitation named, that of unfitness of the members to perform the details of administration, applies to those duties which are

professional in character. Strange to say this limitation does not so readily appear as does the first, especially to newly elected members of a board. It is only at a comparatively recent date that the function of professional or skilled supervision has been to any degree recognized in this country as essential or even helpful to the welfare of the schools.* In the centralized school systems of Europe, particularly those of Germany, France and England, professional supervision is as fully established as is professional teaching; while in those parts of our own country where the greatest progress in education has been made, the supervision of the schools has been changed from that of non-professional school boards to that of superintendents elected for their ability to organize the schools and direct the work of the teachers.

Professional supervision needed.

Besides the superintendent of schools there should be employed by the board several executive officials, whose duties so far as they bear directly upon the work of the schools should be under the direction of the superintendent. These officials are a business manager, a physical director, one or more attendance officers, and one or more medical inspectors.†

Executive officials of the board.

The advisability of the appointment of special supervisors, such as supervisors of primary grades, of drawing, of music, and of physical

* For a brief history of supervision and for plans of organization see Appendix A.

† Medical inspectors may be appointed by the local board of health. See Appendix F.

The appointment of special supervisors not always desirable.

training, will depend upon circumstances. In a large system of independent schools or in a system of schools of any size in which a large proportion of the teachers are untrained, a special direction of work upon lines indicated above seems desirable. But where there are competent supervising principals and where the teachers are trained as they should be, the direction of work by special supervisors is not necessary or even advisable. There is such a thing as too much supervision of work, especially of the work of intelligent well-trained teachers. Such teachers need to have a large degree of freedom in carrying on their work, and abundant opportunity to correlate their teaching in all the subjects of the school.

Duties of the physical director.

If upon any one line or department of subjects special supervision is necessary to the highest efficiency, it is found in connection with the physical welfare of the pupils. For want of a better term to designate the official who will assume this service, that of physical director is named. His duties will be to see that the hygienic conditions of the schools are what they should be, and that the work and play of each individual pupil are such as will secure for him the highest degree of health, grace, and strength. In small systems of schools he may also perform the duties usually performed by a medical inspector.

Secretary of the board.—The secretary may or may not be a member of the board. His duties should be those ordinarily performed by such an official, such as recording the proceed-

ings of the board in a permanent record book, calling special meetings, notifying members of the board of all meetings, notifying each executive officer and each member of a committee of his appointment, preserving files of communications and documents belonging to the board, furnishing all teachers appointed by the board with certificates of their qualifications and appointment, and preparing school returns called for by the national Bureau of Education or state board of education.

Duties of the secretary.

Sub-committees.—There is a tendency in most school boards to make the number of sub-committees unduly great. The rule should be followed of having sub-committees only for business which cannot be well done by the full board, and which it is not wise to leave fully in the hands of the superintendent or any other executive officer. A committee on finance may be necessary to approve bills and audit the accounts; also to recommend appropriations from carefully made estimates. A committee on school-houses should have in charge all matters relating to the erection and alteration of school-houses; such a committee might also nominate the janitors and supervise their work. A committee on furniture and supplies should have in charge the purchase, change, and alteration of school furniture; also the purchase, care, and distribution of all supplies, including text-books, reference books, stationery, etc. A committee on text-books and course of studies should pass in review the recommendations of the superin-

Few sub-committees needed.

tendent respecting text-books and the course of studies, and report to the board.

It is believed that to the above-named committees all business may be committed that cannot be performed by the executive officers of the board or by special committees. Certainly no sub-committee should be appointed which will in any way arrogate to itself duties or functions which belong to the superintendent or any other executive officer. These officials ought to be held responsible for the efficient performance of certain clearly defined duties, and in such performance there should be no divided responsibility.

The necessity
of clearly de-
fined duties.

The superintendent of schools.—The superintendent is the chief executive and advisory officer of the board, employed as an expert in matters pertaining to the teaching and training of children. The division line already hinted at between the duties of such an expert and those of the board and other officials should be clearly defined, in the interests both of economy and of the welfare of the schools.

Construction
and care of
buildings.

In the construction, permanent repairs, and care of school buildings there is needed professional advice which relates to the convenience of the school and the health of the pupils. This advice should be given by the superintendent, matters of detail being left to others.

In matters of equipment, which includes everything that is needed to carry on the schools, the superintendent's advice should be given respecting the kind and quantity desired. So far as

furniture and furnishings are concerned, his advice may or may not be followed by the board; but in respect to text and reference books the prerogative of the superintendent should extend so far as to make it impossible for any books to be selected in opposition to his recommendation. Needed apparatus and ordinary supplies should be ordered under the direction of the superintendent, either by the teachers or by an agent appointed for the purpose. Their distribution should be provided for in other ways than by the superintendent's personal care. It is poor economy to give the work of an expressman or errand boy to a highly paid official. In country districts, however, where the schools are far apart, some of the work of distribution may be done by the superintendent with little loss of time on his part.

School equipment.

In all the work of supervision, no greater degree of technical or professional work is needed anywhere than in the making of a course of studies, and the superintendent alone should do it, or be responsible for it. For reasons of protection against possible contingencies, the course should be ratified by the board, but no additions or omissions should be made without the superintendent's sanction. The course of studies is to teaching what the mariner's chart is to navigation, and no unprofessional hand should tamper with it.

Course of studies.

Full power should be given to the superintendent to nominate teachers, and, when elected, to assign them to the schools in which they are to

Nomination
and direction
of teachers.

teach. Power also should be given him to fill temporary vacancies by substitute teachers. He should inspect and examine the schools frequently, and make such suggestions to teachers concerning teaching and discipline as will assist them in their work. These suggestions may be made to teachers individually or to them collectively in teachers' meetings, which he should have power to call. Sometimes the suggestions will need to be made by class recitations conducted by the superintendent or by some one whom he appoints.

Suspension
and dismissal
of teachers.

The function of suspending and dismissing teachers, as well as of electing them, should be performed by the school board upon recommendation of the superintendent. Good reasons are assigned for giving the power to suspend and dismiss teachers to the superintendent; but the reasons for withholding that power from him and for putting it alone in the hands of the committee are strong enough, at least, to make doubtful the policy of the assumption by the superintendent of the full power either to suspend or dismiss teachers.

Classification
and promotion
of pupils.

By a knowledge of pupils gained through inspection and examination and by the advice of teachers, he should arrange for the proper classification and promotion of pupils. For such important functions he alone should be responsible. Only in this way can be avoided the mistakes of the varying standards of teachers' judgment on the one hand, and of the pressure upon school boards for unmerited promotions on the other.

Wise plans should be made by the superintendent for the placing of each pupil at any time where he can do the most for himself.

Aid through counsel and active support should be given by the superintendent to the school committee, teachers, and attendance officers for the securing of punctual and regular attendance of pupils at school. He should promptly report all violations of the law relating to school attendance and help in its proper enforcement. For the possible protection of the superintendent from thoughtless attacks of offended parties, the school board should assume the responsibility for the enforcement of any rule relating to excuses for absence and the suspension or dismissal of pupils.

School attendance.

The superintendent's duty to the people and patrons of the schools cannot be set forth in formal phrase. By all ways in his power he is to keep up an enlightened public sentiment in regard to the schools, and to aid in fostering a cordial co-operation on the part of all who have any part in their maintenance. By reports, public addresses, parents' conferences, newspaper articles and private conversation he is honestly and fearlessly to tell the truth as to the needs of the schools and express the hopes and plans he has for their improvement.

Duty to people and patrons.

In circumstances where the superintendent cannot attend to details, as in cities or large areas of schools, he may delegate certain duties to principals of schools or other teachers, holding them to the same responsibility which he

Details to be delegated.

assumes to the school board. In a system of schools which requires much clerical work, that work should be done by a clerk, so as to allow the superintendent all the time possible for professional duties. To avoid any misunderstanding, carefully prepared rules should be adopted by the board, defining the duties of the superintendent in all important features of his work, and giving him the largest freedom consistent with a proper recognition of the rights and responsibilities of the school board.

Character of rules needed.

The following rules embody recommendations and suggestions relating to the duties of a superintendent of schools. They may serve as a basis for the rules of school boards which are willing to put so large a part of the direct work of the schools in the hands of the superintendent.

RULES RELATING TO THE DUTIES OF THE SUPERINTENDENT OF SCHOOLS

Rules to be adopted governing the powers and duties of the superintendent.

1. *General powers.*—It is the province of the superintendent to manage and direct the work of instruction and training in the schools, and to advise in all other matters which have any relation to such work.

2. *School buildings.*—In all work of construction and alteration of school buildings the superintendent shall advise respecting matters which relate to the convenience of the school and health of the pupils.

3. *School equipment.*—He shall advise as to the kind and quantity of furniture and furnishings needed for each school. He shall also recommend all text-books and reference books that

are needed, and no book shall be selected by the board in opposition to his recommendation. Apparatus and ordinary supplies within the appropriation made by the board for that purpose may be ordered under his direction as they are needed.

4. *Course of studies.*—He shall prepare and recommend to the board for adoption a course of studies for the schools, and any changes that he may from time to time deem advisable. No course of studies or any part of a course shall be adopted without the sanction of the superintendent.

5. *Teachers.*—It shall be the prerogative of the superintendent to recommend suitable persons for positions as teachers, and the board shall elect no teacher not recommended by the superintendent. He shall assign to places all teachers elected by the board, and transfer teachers from one school to another whenever in his opinion such transfer will secure greater efficiency in the schools.

He shall fill all vacancies occasioned by the absence of teachers, and recommend to the board the suspension or dismissal of any teacher, whenever in his judgment such suspension or dismissal is necessary for the good of the schools.

He shall inspect and examine the schools frequently, and make such suggestions to teachers as will assist them in their work. He shall at proper times hold meetings of teachers for a discussion of the principles and methods of school work, and shall at his discretion give permis-

sion to teachers to attend teachers' conventions or institutes and to visit schools.

6. *Pupils.*—The superintendent shall arrange for the proper classification and promotion of pupils, with the sole object of placing each pupil at any time where he can do the most for himself. He shall excuse any pupil from pursuing one or more subjects of study and from attending school a portion of the time, whenever in his judgment the best interests of the pupil are served by such action. He shall pass judgment in the case of suspended pupils, either returning them to the schools or reporting them to the school board, with such recommendations as he may see fit to make.

7. *Meetings of the board.*—He shall attend all meetings of the board, and have the privilege of speaking upon any question before it, but not of voting. Opportunity shall be given him at each regular meeting to make a report upon the condition of the schools, and to present recommendations for its action.

It will be observed that the foregoing rules do not refer to the minor details of the superintendent's duties, such as keeping needed records of his office, ringing the bell for no session of the schools, and providing for the transfer of pupils. Nor are those duties mentioned which he is required by law to do, such as excusing cases of necessary absence from school and signing school attendance blanks. All these and other duties are either understood or may be defined at any time by special vote of the board. Moreover,

Other duties
of superinten-
dent.

the proposed rules do not hedge him about with requirements and restrictions as to the precise manner in which he shall spend his time. The rules should be made upon the presumption that the superintendent is a person of ability, common sense, and integrity. If he is wanting in any one of these necessary virtues, no rules will make him what he ought to be, and no rules ought to be necessary to show to the committee his unfitness for the work.

The question may be raised whether the powers and duties of a superintendent of schools, as outlined above, fairly or fully meet the needs of supervision in the large cities. It has been assumed in recent years that such cities present difficulties which cannot be met by means ordinarily used in smaller cities. So strong is this feeling in some cities, that a radical change of school administration is advocated by earnest reformers.

School supervision in large cities.

No doubt the form of the superintendent's work should vary somewhat with the number of schools he has to care for; but it is a serious question whether the great extent of his work should lessen the professional character of it. With the assistance that ought to be given, and conditions of freedom from politics, there is no more reason why a superintendent of a large system of schools should be engrossed in unprofessional administrative details than the superintendent of a small system. The chief difference lies in the amount of work delegated to others. There is needed the same professional

knowledge to properly direct the work in both positions, and the responsibility, though differing in amount, does not materially differ in kind.

Professional
supervision
needed for all

With a very small system of schools the superintendent personally directs the teachers and attends to the few needed matters of business. In a small city system he should have the aid of a clerk to attend to business details, and supervising principals and special teachers to whom he can delegate certain supervisory duties. In a larger system he should, in addition to these helpers, have one or more assistant superintendents to whose charge certain grades or kinds of work should be committed. In all these relations the superintendent ought to have a clear professional policy, and see that it is carried out. It is believed, therefore, that the functions here defined might well be exercised by superintendents in any system of schools. They at least may serve as a basis or guide for that division of functions and responsibilities between a school board and the superintendent which is necessary to harmonious relations and the most effective service.

A business
manager
needed in
cities and
large towns.

Business manager.—As has been said, the superintendent in rural towns may to a limited extent attend to small matters of business, such as buying and distributing needed school supplies and looking after the care of the buildings. In such towns also the school board may very properly put certain local matters of business, like attending to repairs and furnishing supplies, into the hands of individual members; but in

the cities and larger towns these and other business matters should be performed by a responsible person known as agent or business manager. The duties assigned should not be such as will in any degree conflict with the duties of other officials or in any way defer giving attention to immediate needs. Among the duties belonging to such an official might be

- (1) attending to all needed repairs of buildings
- (2) purchasing, distributing and caring for all books, apparatus and other supplies furnished for the use of the schools
- (3) keeping all necessary accounts
- (4) supervising and directing the work of janitors
- (5) preparing the pay-rolls of all persons regularly employed by the board
- (6) attending to all matters relating to the tuition of out of town pupils
- (7) taking the school census required by law.

Some of these duties will be performed under the direction of the superintendent, some under the direction of sub-committees, and some under the direction of the board itself. The business manager should however have a large measure of freedom given to him, and be held responsible for results only.

Attendance officers.—The election by the board of one or more attendance officers ought to be required by law, to see that the school attendance laws of the state are properly observed, and to encourage in all possible ways regular and punctual school attendance.

The rules governing the duties of attendance officers.

The rules governing their duties should be brief and explicit. The following rules will perhaps meet the needs of cities and large towns. In small towns the rules may be less elaborate.

1. Annually at a meeting in June the board shall elect the attendance officers and fix their salaries.

2. They shall devote as much of their time as is needed to the duties of their office,* and shall enforce all ordinances and laws in relation to truant children, absentees from school, and such children as persistently disobey the rules of the school.

3. They shall visit such schools as the superintendent may designate at least once a day, and upon request of a teacher duly made upon cards provided for the purpose and countersigned by the principal they shall investigate the absence of any child thought to be a truant and take such action as they may think proper.

4. It shall be the duty of attendance officers to co-operate with the superintendent and teachers in their efforts to secure a regular and punctual attendance of the pupils at school, by frequent visitations in the homes of pupils most inclined to disobey the laws relating to school attendance.

5. They shall visit and inspect each month while the schools are in session all factories,

* In some places only one of the attendance officers needs to give his full time to the duties of his office, the others being called upon only as occasion may require.

workshops, and mercantile establishments in their respective districts, and ascertain if there is any violation of the public statutes relating to the employment of children therein.*

6. They shall keep a record of all cases of truancy and other violations of the public statutes relating to school attendance, showing the name, age, and residence of the offender, and the nature of his offence. They shall make a monthly report in writing to the superintendent.

Medical inspectors.—Experience has shown the value of the service of a close inspection of the schools with the view not only of detecting the symptoms of contagious diseases and thus of preventing their spread, but also of preserving conditions of health. At a comparatively small expense one or more physicians may be appointed by either the school board or the board of health, whose duty it will be to call each morning at the school to see if there are any pupils who in the estimation of the teacher should be examined with reference to determining whether they are too unwell to remain in school. Pupils sent home on account of ill health may be given a properly filled blank stating the reason of the physician's action and his recommendation.†

The duties of
medical inspectors.

* This rule is suggested as suitable for all states which require certificates of school attendance to be given for children up to a certain age. The rule may be equally needed in states which forbid children of a certain age to work in any of the establishments named.

† The examiner's recommendation should refer simply to the need of consulting the family

If the presence of a contagious disease is suspected, attention may at once be given to it by the board of health, so as to prevent its spreading. In case of serious trouble with the sight or hearing of a pupil, advice to the parent may be given, or action which will help to remove the trouble may be taken by the teacher under the direction of the inspector.

In a large graded school system one inspector will be needed for two or three buildings having from twenty to forty teachers. In country towns the difficulties of adequate inspection are greater than in cities and large towns, but they are not so great as to prevent the carrying out of a modified plan by which each school may have from the inspector one or two visits a week. Some of the details of medical inspection as carried on in various places of this country are given in Appendix F.

Meetings of the board.—From what has been said, it will be seen that most of the duties of the school board are performed in its legislative capacity at regularly called meetings. The despatch and efficiency of its action will depend in a large degree upon the order of business, and the rules governing the discussion of matters presented. The following order of business is suggested as a good one to follow. It will be seen that the most important matters are as-

Order of business in meetings of the board.

physician. No treatment should be recommended or any statement be made that might lead to a misunderstanding of the examiner's motive.

signed first, upon the theory that such matters will receive the most attention.

1. Reading the minutes of the last meeting.
2. Report of the superintendent.*
3. Action upon the recommendations of the superintendent.
4. Reports of standing committees and action thereon.
5. Reports of special committees and action thereon.
6. Unfinished business.
7. New business.

* This report will include a report of what has occurred since the last meeting or of existing conditions, together with suggestions and recommendations for action of the board.

CHAPTER V

DISTRICT AND COUNTY ADMINISTRATION OF SCHOOLS

Difference in
the conditions
of school main-
tenance.

Thus far in the discussion of local school administration the presupposed conditions have been those of urban communities. It should not be forgotten that a large proportion of the schools of the country are maintained under conditions quite different from those which are found in cities and large towns, and that parts of the organization of the two classes of schools must be somewhat differently adjusted. It is important however that the principles of administration already defined shall be applied as far as possible to all classes of schools. These principles are:

- (a) separation of the schools from politics
- (b) a well balanced adjustment of centralized and local authority
- (c) a large degree of dependence upon local financial support
- (d) a separation of professional and business functions in administration.

To meet the needs of the smaller rural towns, laws should be passed enabling towns to combine in districts for purposes of supervision. By this plan a union of two or more towns may be formed, with such provision for the support of a superintendent of schools as will be needed to

insure local interest and effort on the one hand and efficiency of supervision on the other. Such a plan will not interfere with the proposed organization of local school boards, which will have the general charge and supervision of the schools in their respective towns. The members of all the boards included in the supervisory district or delegates representing them will meet when necessary for the purpose of electing a superintendent, of apportioning his time for the towns, and of fixing his salary.*

Plan for uniting the country towns for purposes of school supervision.

The superintendent will be subject to the board of each town in which he is employed. For example if, in a district of three towns, the superintendent is expected to serve in the town of A two-fifths of his time, he will spend two days a week in that town, and while there will act under the rules of the school board of A, subject of course to such general statutory provisions as govern the duties of a superintendent. In the towns of B and C his time and duties will be controlled in the same way. His general plan of supervision, including the making of a course of studies, inspection of schools, and the conducting of teachers' meetings, may be largely the same in all the towns, but each town board

* After a probationary period the tenure of the superintendent's office like that of the teacher should be permanent.

For obvious reasons a minimum salary for the superintendent should be fixed by law, and should be large enough to attract to the office the best teachers.

will have its separate organization and determine its own administrative policy.

There should be prescribed by law a maximum and a minimum number of schools in a district. Experience shows that, in country districts where distances between the schools are great and where a good proportion of the teachers are untrained, there should not be over fifty schools or teachers under one superintendent. The minimum limit might be placed at twenty-five or thirty. If the conditions are such as to insure the employment of trained and skilled teachers, the maximum and minimum limits may be considerably greater.*

In states where the support of schools is chiefly local, it may be necessary for towns to receive aid from the state in bearing the expense of this form of supervision; but such aid should depend upon the sustained effort of the towns themselves. It might be a wise provision of the law to oblige towns to provide for the payment of one-half of the superintendent's salary, with the further provision that the amount raised for

* In the country districts of Germany and France the number of teachers for each supervisor is much greater than the number indicated above. The successful maintenance of large supervisory districts in these countries is due partly to the fact that the teachers are well trained and do not need the supervision required for untrained teachers. The same may be said of Austria and Switzerland. In New York the commissioner of education, Dr. Andrew S. Draper, has recently recommended the substitution of a system like that here outlined.

each school by local taxation be kept up to the average of the preceding three years.*

In any plan of district supervision regulated by law and supported in part by the state, provision should be made for the election of competent persons to the office of superintendent. If the selection is left to the towns without any restrictions whatever, mistakes are likely to be made, for in some of the districts there may be either a degree of indifference as to the competence of the person employed or ignorance as to the qualifications which ought to be demanded in a superintendent. In the plan of supervision here outlined for country towns it might be well either to establish by law a minimum of qualifications for the superintendent or to place certain restrictions upon the local board. Perhaps as effective a way as any to reach the desired end would be to limit the selection of superintendents supported in part by the state to candidates approved by the state board of education.†

The above plan can be carried out only where the town or township is made the unit of government. In most parts of this country the county has been made the unit for purposes of

* For a detailed statement of the practical working of this plan of supervision, see Appendix B.

† For some reference to the eligibility of district and county superintendents see pp. 26, 27. See also Dexter's *History of Education in the United States*, p. 198, and Draper's *Supervision of Country Schools*.

Prevailing
methods of
county super-
vision ineffec-
tive.

school administration, largely by reason of the fact that in those sections the county is the dominant political unit. Apart from ease in the adoption of means already employed for other purposes, there is little to be said in favor of prevailing plans of county school administration. In the degree of local educational interest and effort and in the efficiency of school supervision the county plan is far inferior to that of the city or town. There is no good reason however why, with some modification of the present county organization, there cannot be enjoyed the same privileges as are now enjoyed in separate municipalities. The following plan is suggested as a basis of county organization for an effective administration of schools.

A plan of
county super-
vision sug-
gested.

Let the county elect a single board consisting of a sufficiently large number of members to represent all parts of the county. The number of members constituting the board may be a multiple of three, so that the term of office may be three years, one-third of the membership expiring every year. The powers and duties of the board may be essentially the same as those which have been defined for municipal boards, with the possible difference of some increased powers for members of the county board in respect to the external affairs of the schools in their immediate neighborhood. The size of the county and the difficulty of travel will make it inconvenient to have frequent meetings of the board, and therefore certain duties usually performed

by a municipal board or by a sub-committee may fall upon individual members.

The board will elect a superintendent of schools, who will have the same powers and duties as have been defined for city and town superintendents. If the county is large he ought to have one or more assistants. Fifty rural school rooms or one hundred city or village rooms are as many as one person should be expected to supervise, unless, as in large cities, there are supervising principals; in which case two or three hundred schools might be in charge of one supervisor.

The support of all the schools of the county except that which is afforded by the state will be by taxation. The money raised will be distributed by the county board to the various schools according to their conditions and needs. It is understood that the proposed plan applies alike to those counties which have cities and large towns in them and to those which have only a sparsely settled population. Wealthy centres should assist in the support of schools situated in sections not able to raise by taxation a sum needed for maintaining good schools.

The plan above outlined is essentially the same as that which is followed in several counties of the South and West.* As will be seen it involves an organization quite simple in character, one that can be easily introduced in place

* For a detailed account of the working of this plan in one of the counties of Georgia. See Appendix B.

of the present prevailing plan. It is generally best in effecting reforms to build upon existing practices, but in many of the county systems a reorganization upon new lines will be necessary, so far at least as to make the superintendent a professional rather than a political official.

CHAPTER VI

THE SUPERINTENDENT AS ORGANIZER

In general the duties of a superintendent of schools may be divided into two classes, those of an organizer and those of a supervisor. His duties as organizer require him to get and to keep all parts of the school system in good working order. The parts in relation to the direct work of the schools are the school buildings and furnishings; the departments, grades, subjects of study and times; the school board, superintendent, teachers, and janitors. These parts of the school system are to be so adjusted in relation to one another that the ends for which the schools are organized may be most effectively attained.

The subjects of school organization to be considered somewhat in detail are:

(1) the construction and furnishing of school buildings

(2) school attendance and gradation, including

(a) age of admission (b) length of course

(3) course of studies, including (a) subjects of instruction (b) elective studies (c) correlation of studies (d) time limits (e) making of school programme

(4) classification and promotion of pupils

(5) departmental instruction

(6) special school classes

Features of school organization to be considered.

(7) the qualifications and appointment of teachers

(8) text-books and supplies.

Some of the above mentioned features of school organization are controlled wholly by the superintendent and some are made the subject only of advice on his part; but whatever his relation to them may be, it is necessary for him to have as full knowledge as possible of their nature and use, both in theory and in practice.

The construction and furnishing of school buildings.—If the relation of the superintendent to the external conditions of the schools is as close and responsible as is assumed in Chapter IV, it follows that he should have a definite knowledge of what is most desired for health and convenience in the way of buildings and their equipment. Of course in respect both to ideals and to the method of securing them he will be guided by circumstances. What will be suitable and desirable in one place will be altogether impracticable in another. But in all places the superintendent should remember that providing the material means of carrying on the schools is not his chief business, and must not monopolize his time. He should in the planning and construction of school buildings give prompt assistance to building committees, and in the furnishing of equipment of every kind he should do all in his power to provide an ample supply.

In the construction of school buildings three considerations should be kept constantly in mind:

(a) health of teachers and pupils

School buildings and their equipment,

(b) convenience in carrying on the work of the schools

(c) economy.

Emphasis is placed here upon the first two of these considerations in the belief that building committees look to the superintendent mainly for assistance in these directions.

Whenever it is possible to do so, an architect should be employed to draught plans and oversee the work of construction of school buildings. One who makes a careful study of school architecture is likely to provide all that health, convenience, and good taste demand, to a far greater degree of satisfaction than a carpenter or a building committee can provide without such help.*

An architect
needed.

School buildings should in no case be more than three stories high. In the country they should consist of but one or two stories. A cellar should be under the entire building, and be thoroughly ventilated. It should be cemented throughout, and be so arranged that it may be used in cold and stormy weather for boys' and girls' playrooms.

Height of
school build-
ings.

The lower floor of the building should be not less than 18 inches above the surface of the lot, and the walls should contain vertical air chambers. The floors of the schoolroom should

Construction
of floors and
ceilings.

* In Massachusetts, plans and specifications of proposed school buildings must be approved by an inspector of factories and public buildings. The same official is also required by law to inspect school buildings, with authority to correct existing defects of sanitation.

be of hard-wood, kiln dried boards not over four or five inches wide, fitted so close as to permit no cracks in which dirt can settle. The floors should be so built as to permit the least possible vibration and transmission of sounds. Double floors with heavy building paper or mineral wool between them will help to accomplish the desired end.*

Size of school
room.

The schoolrooms should be large enough to allow enough single desks to be placed in them to accommodate the largest number of pupils likely to be in attendance, and to give space for recitation seats and extra tables. They should be large enough also for games and gymnastic exercises, especially if there is no gymnasium or playroom in the building.†

Furniture and
furnishings.

The furniture and furnishings of schoolrooms should be such as are needed for convenience and efficiency. Besides desks and seats of suitable construction the following articles should be provided for every schoolroom; teacher's desk having several drawers, book-case, chairs for teacher and visitors, one or more tables, crayons, erasers, pointers, clock, bell, thermometer, broom, ink-filler, dustpan, dusters (soft pieces of cloth are the best dusters), waste-basket, suitable wall

* Floors consisting of narrow boards or blocks of wood in cement have been found very satisfactory. They are described in Burgenstein's *Handbuch der Schulhygiene*, Jena, 1895. See also Kotelmann's *School Hygiene*, Syracuse, 1899, pp. 95-100.

† Other features of schoolhouse construction are given in Appendix F.

pictures, and (if there is no dressing-room) toilet appliances. Some schoolrooms should have in addition to the above-named articles a moulding-table, and a piano or organ.

The kind and amount of apparatus used in teaching indicate in no small degree the character of work done. It is not always desirable to purchase apparatus which is the most costly. Indeed much of the most valuable apparatus used may be made or gathered by the teachers and pupils, especially that which is needed in the observation lessons. Charts of any kind can be made of thick manilla paper, marked with artist's crayon or with a rubber pen. The following list comprises the minimum amount which should be found in every primary school-room, or at least which should be accessible to every teacher.

Kind and
amount of ap-
paratus
needed.

Blocks, splints, and shoe-pegs for number and "busy work"; measures (dry, liquid, linear, metric); balance; toy money; globe; wall maps; charts for number, reading, writing, anatomy, and music; numeral frame; drawing models, and compasses; toys and other objects for reading; forms for mensuration; pictures for language, geography, and history; cardboard for number, language, etc.; colored worsted; colored cardboard for form and number; plants; minerals; mounted insects; pen-holders, and pens, lead-pencils, and paper of various kinds; ruler.

If slates are used (paper is better), good slates, sharpened pencils, sponges and coarse files should

be provided. Among the materials for "busy work" may be mentioned paper for folding and weaving, sticks and splints for laying, forms of animals and other objects for tracing, letters for making words, words for making sentences, designs upon cardboard for drawing.

It will be seen that the above list does not comprise some of the means of teaching physiology and other observation lessons which may be gathered from day to day, such as flowers, leaves, and plants. Neither does the list include the little devices used for illustrating the mensuration of boxes, walls, etc., nor any of the tools and materials used for the industrial work carried on in all the grades.

School attendance and gradation. — Practice varies in America as to the earliest age of admitting children into the school and also as to the length of the course.

In most places where the earliest age of admission is 6 years, the length of the elementary course is 8 years, and where the earliest age is 5 years, the course is generally 9 years in length. Exceptions to this are found in towns and cities whose elementary course is 8 years in length for pupils who are permitted to enter school at 5 years of age. It should be said that in all places where the earliest permitted age of admission is 5 years, the actual average age of the admission of pupils into the lowest grade is much higher.

In the public elementary schools of England children may begin at 3 years of age and must begin at 5, remaining in the infants' school un-

Duration of
school course
in America.

Practice in
England.

til the age of 7. The length of the subsequent course is 7 years.

In France and Germany the earliest age of admission to the primary school is 6 years, and the length of the elementary course is from 6 to 8 years. In France, however, nearly half of all the children from 2 to 6 years of age are enrolled in the mother schools (*écoles maternelles*), or lower primary classes (*classes enfantines*). Many cities of Germany and of this country also provide for children under the age of 6 in the public kindergarten.

Practice in
France and
Germany.

It is possible that the differences in this country in the earliest age of admission to the elementary schools and in the length of the course of such schools will disappear when the kindergarten becomes universally a part of the public school system. It may be fairly questioned, however, in any event, whether much of the formal intellectual work now carried on in many first year primary classes should be demanded of children before the age of 6. If, where children are permitted to enter school at 5, a sub-primary course could be pursued, consisting largely of manual and observation exercises, advancement in subsequent work would be likely to be quite as rapid as it is at present where pupils are required to read and write much during the first year. In case there is a kindergarten course which children can begin at 3 or 4 years of age, the work of the sub-primary class could be supplementary to the work of the kindergarten and be preparatory for the more

A sub-primary
course advis-
able.

formal work of the primary school. According to many of our best kindergartners and primary school teachers some connection between the two schools is very much to be desired. Further details of the proposed plan will be given later in connection with the course of studies.

Children not to begin formal work before six years of age.

Whether the kindergarten or sub-primary courses are offered or not, it is doubtful if pupils should begin regular formal school work under the age of 6. While the work pursued in the sub-primary class should be closely connected with the course pursued in the following year and be a preparation for that course, it should not be a necessary preparation. That is, pupils of 6 years of age and upwards who have never attended school should enter the lowest grade of the primary school without taking the preparatory work of the sub-primary class. The present classification in most places obliges pupils of all ages who have not attended school to begin the primary reading and number work together. Such work is found as discouragingly hard to some as it is demoralizingly easy to others.

Elementary course to cover eight years.

If the regular elementary school work begins for children of 6 years of age, it should be no more than can be easily performed in 8 years by average pupils. Some of the pupils will be able to finish the course in 6 or 7 years, enabling them to be ready for the high school at 12 or 13 years of age. But as these instances of early preparation are offset by instances of late entrance upon the elementary school course, the

average age of graduation from that course is not likely to be less than 14 years.

On some accounts it will be found convenient to separate the elementary school pupils into primary and grammar grades. The division line between these two kinds of schools varies in present practice, some of the primary schools covering 2 years' work, others covering the work of 3 and 4 years.

The division line between primary and grammar grades.

One natural and well recognized method of distinguishing the grammar school course from the primary is on lines of proficiency in what may be called the mechanics of the two sequential subjects of reading and arithmetic. As soon as the pupils are able to read at sight any ordinary second reader and to work with a fair degree of facility in the four fundamental rules of arithmetic, they ought to be ready for some formal study in geography and other information subjects. This division line might be placed at the end of three years, although doubtless many pupils could reach it at the end of two years. By such an arrangement the course would be arranged as follows: primary school 3 years, grammar school 5 years, and high school 4 years. There are good reasons for dividing the entire course into three equal parts, giving four years to the primary school, four years to the grammar school, and four years to the high school. Again, much can be said in favor of dividing the course of 12 years into two parts and of considering the high school work to cover 6 years.

The subject of length of grades will be consid-

ered later under the head of Classification and Promotion of Pupils.

Course of studies.—There is some danger of exaggerating the importance of a course of studies. As men can not be made good by any amount of legislation, so the work of teachers can not be made effective by the mere directions of a course of studies—be they ever so wise. There are good schools with poor courses of studies or even with no courses at all, just as there are poor schools with very excellent courses.

A course of studies advisable.

But while the teacher always and everywhere makes the school, the advisability of placing before him a guide as to subjects and times can not be questioned. It is better however for the superintendent not to make a too radical change in the course at first and not to make any course before the school conditions are well understood. Either the general outline of the state course or the existing local course may for a time at least be used as a basis of work, supplemented by directions and suggestions which may be given either by special written bulletins or at the regular monthly or bi-monthly teachers' meetings. If circumstances permit it will be advisable to limit the positive directions of the course to a statement of the subjects in general that should be taken up in given periods.

The course should not be too minute.

Certainly it is not wise to put before the teachers a detailed statement of *all* they are expected to accomplish during fixed periods of time. Some courses even go so far as to point out the exact pages of the text books which are to be

gone over in a given period, the presumption being that the topics included in those pages will constitute the entire work of all the pupils. Such courses are made upon the assumption that every pupil will accomplish as much as every other pupil and no more. The leveling system is complete where examinations for promotions based upon these requirements are given by some one other than the teacher.

The course of studies should aid the teacher in adapting the instruction to individual pupils; and it will do so best by giving to teachers a large measure of freedom in the selection of material. The excessively large number of pupils to a teacher found in most schools renders it impossible to accomplish the results of adaptation in any degree satisfactory to the best teachers. The brighter and quicker pupils as well as the duller and slower ones, are not reached in the way they should be reached. The present customary plan of keeping together for long periods all the pupils of a large class upon the same kind of work is harmful alike to the quicker and to the slower pupils; to the former in the undue suppression and lack of stimulation to healthful effort, and to the latter in discouragement and superficialness.

Obstacles to the teacher's success.

A course of studies is intended as a guide in determining

(a) the subjects of instruction that shall be pursued

(b) the time—both relative and absolute—
which shall be given to the various subjects

Characteristics of a course of studies.

(c) the order in which the subjects and parts of subjects shall be presented and reviewed

(d) the distribution of subjects that shall be made in the programme in respect both to a proper correlation of studies and to the teaching force of the school.

Two theories
of an element-
ary school
course.

Subjects of instruction.—Two widely opposing theories prevail respecting the number and kind of subjects to be taught in the elementary schools. Some would have the curriculum confined to a few subjects, scarcely more than the three R's; others advise the extension of the course so as to include many subjects which are sometimes begun in the high school. The advocates of a limited programme urge the necessity of thoroughness in the branches studied, partly it may be supposed on account of the mental habit formed. They also plead for what are called essential subjects, presumably because these subjects are deemed more practical than others. Those who believe in the extended courses say that the nature of young children will not permit an exhaustive study of any one branch, but that it demands studies which will yield a large number of facts relating to many subjects. In this way, they argue, the mind is made to have a substantial basis for subsequent study and for a many-sided interest which is essential to good scholarship and intelligent living.

There is wisdom in both of these views and the selection of studies should be made with both views in mind. That the curriculum of

the elementary schools should include the subjects ordinarily pursued in such schools is beyond question. These include reading, writing, language, arithmetic, geography, history, and grammar. Other subjects—drawing, singing, physiology, and elementary science—are coming to be reckoned among the essentials of a good course. In many states these subjects are pursued in a majority of the schools, and in some of the states they are required by law to be taught. The only remaining subjects the wisdom of whose adoption in the elementary course is either denied or doubted by a large number of educators are algebra, geometry, industrial training, and a foreign language.

The essentials of a good course.

Doubtful subjects for grammar schools.

There are two avenues of approach to the settlement of all mooted questions, the avenue of reason and philosophy, and that of experience. We can point to each of the doubtful subjects of study and ask from the standpoint of culture and discipline or of direct use in life why it ought to have a place in the course of studies; or we can appeal to the experience of thoughtful people who have practically tested the value of each of the subjects taught. It would not be difficult to show the reasonableness of including algebra and geometry in the grammar school programme, both on account of their practical value as aids in the solution of every day problems, and by reason of their use as a means of mental discipline. The same may be said of a foreign language. The increased power which one possesses in an ability to read and speak in

Two ways of determining what subjects should be offered.

Theories of a grammar school curriculum discussed.

a language other than one's own is undoubted. And when we see how readily a foreign language is learned during the period of childhood and early youth, it seems an inexcusable neglect not to provide the opportunity for its study in the grammar school. There remains but one of the doubtful subjects to be considered and that is industrial training. If it is true that education should prepare for vocational as well as for social and civil life, and if it is true also that in the training of the hand there is a training of the intellect and the will, we must conclude that hand training of some kind should have a place in all grades of the elementary school.

Results of experience in private schools.

So much for theory. What shall we say of the result of practice in teaching these subjects in elementary grades? In many of the private schools of this country some of the doubtful subjects named are taught to pupils of grammar school age. The fact that this practice has prevailed for many years is in itself evidence of its value. It is said in justification of making a difference of programmes in private and public schools that the patrons of private schools are from a more cultured class than are those of the public schools, and that therefore the higher studies may be begun earlier. It may be said in reply that in this country there should be no recognition of a difference of classes in the establishment of a system of public education. What is good for the so-called "upper class" must be good for all classes and all should have as far as possible an equal chance.

Again it is said that the number of pupils to a teacher in private schools is comparatively small and that hence the conditions there are more favorable to the pursuit of an extended course than in the public schools. Surely the wisdom of a choice of studies at a given time should not depend upon the size of classes. If constructive geometry, for example, is a profitable study for a class of three pupils of a given age, it ought to be profitable for a class of thirty of the same age. Besides it is to be hoped that the number of pupils to a teacher in the public schools will in the future be nearer the standard set by the best private schools than it is at present.

Choice of subjects not to depend upon size of classes.

But experience with an extended curriculum is not confined to private schools. It is well-known that a large number of grammar schools throughout the country include in their subjects of study geometry, algebra, and a foreign language. The testimony of persons best qualified to judge the results of this experience seems to be convincing, so far at least as the usefulness and desirability of including some subjects in the curriculum of elementary schools which have hitherto been begun in the high school.*

Results of experience in public schools.

How far such extension of the elementary school curriculum should be carried will depend largely upon the way in which the subjects are taught or in what aspects the various sub-

* For detailed testimony respecting the value of an extended curriculum for elementary schools see Appendix G.

Choice of subjects to depend upon the way they are presented.

jects are presented. As we come to know the choices and capacities of pupils, we find that breadth rather than depth of knowledge is needed in the earlier grades, and that the elements of any subject may fittingly be presented to young children. But the mistake must not be made of anticipating the child's mental growth by presenting as a science or as philosophy what ought to be matters of observation or fact. The present sharp division line between the grammar school course and the high school course may be eliminated by an extension of the high school studies into the lower grades, but the existing difficulty will be greatly enhanced if these studies are brought down in their present form. Such an extension of studies instead of enrichment would be impoverishment and waste.

How the difficulties of multiplicity are to be met.

Again, in choosing subjects of instruction for the elementary school course, the difficulty of a multiplicity of studies must not be overlooked. So far as a correlation of kindred subjects, either in the course of studies or in the teaching, can help to meet the difficulty it should be made. And finally, the immediate as well as ultimate and general needs of the children should be met so far as circumstances will permit. While it is true that the education of children and youth should be rounded off at every stage, and that what is proper preparation for a higher grade of instruction should be a proper preparation for life, it is also true that a differentiation of studies somewhere in the course, according to the tastes

and needs of pupils, may be highly desirable whenever it can be done without detriment to the best interests of the schools.

With these limitations and with the condition that good teachers are employed, it is safe to say that all of the hitherto mentioned studies, including algebra, geometry, industrial training, and one foreign language should have a place in the grammar school curriculum.

Proper subjects of a grammar school course.

Acknowledging that some study of a foreign language is desirable in the grammar school, we may be at some loss to determine which language it shall be. Doubtless the selection in some instances should depend upon circumstances; thus in a community where there are a number of French or Spanish speaking people one or the other of these languages should be taught; or if there are teachers of Latin close at hand and no one that can teach a modern language, Latin will naturally be the language taught; but if there are no local or incidental reasons for a choice, there would seem to be more good reasons for choosing a modern language than for choosing an ancient one. If the study of it is begun early in the grammar school course and continued to the end of it, a good reading and speaking knowledge of the language may be gained, even though it be pursued with moderation.

A modern language preferred.

The subjects offered in high schools are determined largely by the demands of the colleges and higher technical schools. It is feared that too often these demands determine the subjects

College re-
quirements
not to domin-
ate the high
school course.

of study not only of the pupils who intend to enter the higher institutions but also of that larger class of pupils who pass from the high school directly to their life work. It is for this reason that the greatest care should be taken lest the zeal to conform to college preparatory requirements force wrong standards upon pupils whose school life ends with the high school. It is the latter class of pupils therefore that must be kept specially in mind in making up a high school programme. Such studies as physical geography, English literature, English composition, history, physics, physiology and hygiene should receive special attention, or at least be offered in liberal measure. Manual or industrial training also should have a large place in some of the courses of the high school. This emphasis upon important subjects does not preclude proper attention to foreign languages, mathematics, and the various sciences.

Present plan
of electives
in German
and American
high schools.

Elective studies.—There has come to be felt in this country the necessity of offering a plan of studies for high schools in which the privilege of choice is given in the selection of some of the subjects of study. In Germany the selection is made by schools, each kind of school having a fixed curriculum. Here the plan generally adopted is that of arranging the studies in groups or courses and giving the pupils the privilege of choosing the course they wish to take.

In the larger schools there are usually two or more electives offered in each course, the number of electives increasing year by year. In a few

schools the practice prevails of giving the privilege of selection from a widely extended list of subjects.

There can be no doubt that some of the subjects offered in high schools should be elective. Many would go further and say that the list of subjects offered should be very extensive and that all of the subjects taken by a pupil should be elective. Perhaps a medium plan may be safely followed of offering a number of courses—from two to five, depending upon the size of the school; and of permitting each pupil to select all but one or two branches. These required branches might be English, including literature composition, etc.; and history. Great care should be taken in the selection of subjects. A good plan is for advice to be given by the teachers to the parents and for cards to be issued asking that a selection be indicated by a parent or guardian.

A medium plan recommended.

It has been generally assumed that the subjects pursued in grades below the high school are subjects needed for all pupils, unmindful of their expected career, and that therefore such subjects should be made obligatory in these grades. But the introduction of new studies into the grammar school course has brought up again the question of carrying the elective system below the high school so far at least as the new studies are concerned.

There seems little question of requiring all the pupils below the high school to pursue the ordinary English branches—reading, writing, arithmetic, geography, and history. Algebra, geome-

Required subjects in grammar schools

A foreign language the only elective in grammar schools.

Time limits to be determined by the needs of the pupils.

try, and book-keeping may well be taken with arithmetic in the higher grades, or at times be required in place of it. To pupils who are not going beyond the grammar school algebra and geometry may seem a waste of time and energy, but in their practical bearings they are equally useful to all and hence may properly be included in the required subjects. Drawing, singing, and industrial training have even a stronger claim for recognition as required studies than algebra and geometry. A foreign language may very properly be offered as an elective in place of, or in addition to, English grammar. It should however be begun early in the course and be carried on in such a way as to require little of extra study at home. Two or three recitations a week in a modern language during the last four or five years of the grammar school course will give abundant opportunity for pupils of average intelligence to acquire the ability to read easy reading, to converse in simple speech, and to know something of the grammatical construction of the language.

Time limits.—A determination of the time which should be given to the various subjects of study is important not merely on account of the convenience of classification but chiefly by reason of the fact that it expresses the relative value of the studies to the pupils.

One way of ascertaining a proper standard of time limits is by a consideration of the subjects themselves and the needs of pupils for instruction in those subjects. If for example it is be-

lieved that there is little disciplinary value in arithmetic and that the real arithmetical needs of graduates of the grammar school are limited to a knowledge of the four fundamental rules, it is evident that only a small amount of time will be given to that subject beyond the third or fourth year in school. If, on the other hand, both the disciplinary and the practical value of arithmetic is thought to be great, a liberal allowance of time will be given to the subject daily throughout the course.

From this point of view, we may regulate in a general way the time which should be given to a subject or group of subjects. For example, we know from the nature of the child that observational subjects should have a relatively large place in the programmes of the primary school and of the lower grades of the grammar school, while the reflective studies should largely predominate in the higher grades of the grammar school and in the high school. We judge also in the same way that the formal studies, such as mathematics and language, should not monopolize the time of the pupil in any grade, or prevent a good degree of attention being given to science, history, and literature.

Looking more closely to the nature and needs of the pupils, we may come to a more accurate estimate of the relative time to be given to each subject. Upon the theory that so-called discipline of the mind may be gained by means of practical subjects and that the practical subjects to be pursued are those chiefly which assist in the

Relative amount of time given to observational and reflective studies.

A large share of time to be given to practical subjects.

preparation for vocational and social service, we shall make prominent in the course the studies which directly serve those ends. Upon this basis, the following groups of subjects would seem to have about an equal claim upon the time of the school:

Co-ordinate
groups of sub-
jects.

1. Language and literature
2. Geography and history
3. Drawing and industrial training
4. Mathematics and science.

That is, a five hour school day would be divided so as to give about $1\frac{1}{4}$ hours to each group of subjects named. In this division of time several circumstances should be taken into consideration. In the first place the day's programme should be arranged so as to give pupils an opportunity for study. Opportunity also should be given for singing and the needed physical and recreative exercises. Moreover a varying degree of emphasis must be placed upon each branch of study as the pupils progress in their course. In general therefore it may be said that the daily time for recitation in each group of studies named above should be more or less than one hour, depending upon the age and grade of pupils.

Upon this basis the proportion of time for each group would be about as follows:

Proportion of
time to be
given to each
group of sub-
jects.

I. Language (including reading, writing, spelling, composition, English grammar and literature, and a foreign language), *one fourth*.

II. Mathematics (including arithmetic, algebra, geometry, and book-keeping) *one-eighth*.

III. Elementary science (including nature-

study, physiology, hygiene, and geography), *three-sixteenths*.

IV. History (including civil government, biography, and history proper), *one-eighth*.

V. Miscellaneous exercises (including singing, drawing, industrial training, physical exercises, and recesses for games), *five-sixteenths*.

The above proportion of time would give an average approximate number of minutes weekly to each subject as follows, counting the week to consist of 5 days and the day to consist of 5½ hours:

Actual time for each group.

I. Reading and literature.....	150	} Total, 410
Writing	60	
Spelling..	50	
Language and grammar....	150	
II. Mathematics, (arithmetic, algebra, and geometry)....	210	} Total, 210
III. Geography.....	200	
Physiology, ele. science....	110	} Total, 310
IV. History, civil government, biography, etc.....	210	
V. Opening exercises, physical exercises and recesses.....	150	} Total, 510
Industrial exercises.....	250	
Singing.....	50	
Drawing.....	60	

The above allotment of time is for all the exercises of the school. For example, an average of 80 minutes a day will be given to all the recitations in the Language group of studies, 40 minutes to mathematics, and so on. To enable

the pupils to have sufficient time for independent study a division of the school in some subjects into sections will be necessary, some of the classes reciting every day and some only two or three times a week.

The results of experience in this country and Europe.

A much closer estimate of the time which should be given to each subject may be found by a careful comparison of times allowed in good courses of studies, on the supposition that the combined wisdom of many makers of courses must be more reliable than the wisdom of any one person. An extended inquiry into the practices of a large number of the most progressive systems of schools in this country and abroad has been made the basis of a careful estimate of the amount of time which should be given to each group of subjects. The estimate in general is as follows:

Time for subjects in the sub-primary class.

In the sub-primary class, or connecting class between the kindergarten and the first grade primary, a larger share of time should be given to observation lessons, games, weaving, paper cutting, etc., than is given in subsequent grades, while a comparatively short time should be given to reading, writing, and number, the proportional allotments for this grade being approximately as follows: for physical exercises, games, manual training, etc., a little more than one-third; for language, including reading, writing and composition, a little less than one-third; for number, one-sixteenth; for observation lessons, one-fifth, and for story telling and memorizing of gems, one-tenth.

The formal language studies should occupy a larger proportion of time in the earlier grades of the regular elementary course than in the later grades, while mathematics should have a less prominent place in the lower grades than in the upper; the approximate proportion of time for formal language exercises being from two-fifths to one-fourth, and for mathematics from one-eighth to one-fifth. The time allotted to elementary science or nature study should be at the beginning of the course about one-eighth of the entire school time, increasing in amount until in the middle grades it is one-fifth of the time, and falling off in the last two grades to one-sixth and one-eighth of the time. History, including literature, biography, civil government, and history proper, should occupy about as much time as science in the first six grades. In the two upper grades about one-fourth of the time should be given to the history group. To singing, drawing, and manual training there should be but little difference in the proportion of time given in the various grades of the course, the approximate proportion of time being from one-fourth to one-fifth.*

Time for subjects in the primary and grammar grades.

To establish for high schools a theory of limits as to the time which should be given to the various subjects of study is even more difficult than to establish such a theory for elementary schools, for the reason that the requirements for entrance to higher institutions are to be taken into con-

Difficulty of establishing time limits in high schools.

* For details of the investigation upon which these estimates are made see Appendix G.

sideration; and until such requirements are made to agree with the requirements of a preparation for life it will be practically impossible to regulate courses, at least college preparatory courses, upon any just basis.

In all the courses, both required and elective studies should be so arranged that the cultural as well as the practical needs of the pupils will be met. There must also be kept in mind the need of providing foundation studies for all technical subjects. From an extremely practical point of view the studies to be offered in any course will be those which contribute directly to the future vocation of the pupils taking the course. With such a view, the business course will consist only of business studies such as penmanship book-keeping, stenography, and typewriting; and a mechanics course will consist only of such studies as drawing, wood working, and forging. But if we consider as desirable the need of a preparation for all the duties of life and also the need of a thorough groundwork in a knowledge of principles, we see that a technical course should be much broader than either of the courses indicated.

Culture studies to be required throughout the course.

It seems only reasonable, therefore, that such culture studies as history and English literature should have a large and continuous place in an ideal course, designed for pupils who are fitting either for a higher institution or directly for life. The same may be said of English language, including composition, grammar, rhetoric, etc. Three recitations a week in both history and

English literature throughout the course and two recitations a week in English language would seem not too much to require of every pupil. Upon the assumption that each full time pupil will have 18 recitations a week in addition to physical training, singing, etc., there will be left 10 recitations a week for optional studies. If the selection is made in recognition of the principle of a many-sided interest or a harmonious development of the powers, both science and mathematics will receive a fair share of attention—perhaps 3 recitations a week in each study, allowing the remaining 4 periods to be given to a foreign language. If it seems desirable to offer a second foreign language for 2 or 3 years, time could be found for it either by increasing the number of recitations per week or by dropping one of the other studies.*

Science, mathematics and language in the high school.

Grades and courses.—Upon the assumption that the kindergarten and connecting or sub-primary classes are made a part of the school system the courses will be as follows:

1. Kindergarten course of one year for children 4 years of age.
2. Sub-primary course of one year for children 5 years of age.
3. Primary school course of two years to be begun by children 6 years of age.
4. Grammar school course of 6 years for pupils who have completed work required for the primary course.

The various courses and time for each.

* For brief outlines of high school courses adapted to various conditions, see Appendix H.

5. One or more high school courses of 4 years for pupils who have completed the work required for the grammar school course.

Age of graduation.

If the above plan is closely followed and if promotions from grade to grade are uniformly made, all the pupils will graduate from the highest course at the age of 18. If, however, the subjects of study are properly selected and arranged and if the plan of promotions is as elastic as it should be, the age at which the pupils will leave the high school will range from 16 to 20 years and the training provided in this school will be a good preparation either for college or for the ordinary duties of life.

Quality and not quantity to be emphasized.

It is well known that the tendency of unwise and unskilled teachers is to emphasize the quantitative rather than the qualitative side of their work; to regard the work of teaching mainly as an assistance to the pupils in obtaining a certain amount of knowledge or information; and as this can be measured best by the pages of the book or by the per cent marks in an examination these standards are uppermost in their minds. The apportioning of subjects and topics in a course of studies so that the attention is fixed mainly upon the amount to be learned tends to strengthen these convictions of unwise teachers and places unnecessary restraints upon wise ones.

Some teachers to have a large degree of freedom.

It may be said that whenever a course of studies gives a great degree of freedom to teachers, there is likely to be a neglect of essentials and a weakening of work that may be called consec-

utive. But this can be true only of unwise and unskilled teachers. With those teachers who understand what all their pupils most need and who know how they are best to be provided with it, the faults above alluded to are not likely to exist. To them the fixed bounds of non-essentials stand in the way of a proper adjustment of the work to the needs of the pupils. In matters only that are essential or important should limitations be indicated in a course of studies.

But even the limits of the essentials of knowledge might well be omitted in a course to be followed by one teacher alone. It is only in a system of schools where two or more teachers are employed that a limited plan or programme of studies is needed. The fact that the non-essential subjects are almost limitless in number and kind renders it impossible to make a selection of such subjects as will be suitable alike for all schools or for the pupils of all teachers.

For these reasons, a course of studies intended for the schools of a large section, as of a county or state, should first of all be general in character, and be confined largely to the designation of subjects that are essential or important. This course may be used as a basis for a city or town course having the following features:

1. A general outline of subjects to be taught in the various grades and classes, related subjects to be given in groups.
2. A designation of important or principal features which must be taken by all for a proper understanding of the subject.

Features of a city or town course of studies.

3. A designation of the less important features which may be taken up by some classes and pupils.

4. A special syllabus upon each subject or group of subjects giving in detail, (a) suggestions of topics, from which the teacher may select in giving work to a class or to individual pupils, (b) suggestions to teachers as to means, methods, sources, etc.

5. A division of the various subjects in such a way that at given periods of time there may be a rational and orderly correlation of studies.

A minimum
of work to be
designated.

It may be necessary to designate periods of time during which prescribed work must be accomplished, but it should be done in such a way as to permit an elastic system of grading and promotions. This may be effected by designating the *minimum* of work which is to be done within certain periods, and by placing in a parallel column the time at which all that goes before shall be completed. The outline of subjects thus presented will be only the essential or most important work required to be done.

General and
specific
courses.

Some superintendents follow the plan of placing a general course before their teachers, and of supplementing this course by specific directions in monthly grade meetings. This plan succeeds well where not too many details are given, and where the independence and originality of the teachers are not interfered with. It has the advantage of affording opportunity for constant adjustment of work to new and varied conditions, and of assisting untrained or inexperienced

enced teachers in a proper interpretation of directions. Such a plan is especially advantageous for directors of special subjects, like drawing and nature study, inasmuch as it gives opportunity for instructing teachers in such technical details as are not well understood by them.

The plan of issuing separate pamphlets or slips, containing the prescribed and suggested work for each subject in all the grades, has the advantage of bringing before each teacher a statement of what is expected to be done in a given subject in all the grades, thus making it easy for every teacher to know what every other teacher is expected to do,—a necessary condition for good work. This condition is not likely to exist under a plan followed by a few superintendents, of presenting the prescribed course of each grade in a single pamphlet.

Separate pamphlets of prescribed work.

The question as to whether the course shall be presented by years or terms in each subject—or by subjects in each year or grade will be determined largely by circumstances. Teachers are perhaps less likely to confine their attention to the requirements of their own grade or grades by the former plan. The advantages of both plans may be secured by placing the requirements in tabular form opposite a given year or term. By this plan the requirements of a special grade will be read horizontally and the requirements of all grades in a given subject or group of subjects will be read vertically.

Methods of laying out the work.

Correlation and concentration of studies.—The terms correlation and concentration as applied to

Correlation
and concentra-
tion of studies
defined.

a course of studies are sometimes used interchangeably—but in the meaning of the two words there is a technical difference which should be kept in mind. Correlation of studies may be defined as the process of bringing related subjects into such relation to the mind that they may be comprehended and used together. Concentration of studies goes one step further. It combines with correlation a study of several subjects in relation to a common subject as a centre. It is the process of focussing related subjects so that emphasis may be placed upon a central subject, the focussing to be made from the parts of a subject, from the subjects of a group, or from all subjects of the course.

The practice of some schools in recent years suggests possible dangers of over-correlation—dangers of restrictive limitations on the one hand, and of the forcing of unnatural relations on the other. But some of the practices also suggest lines of correlation which every course of study should indicate.

Uses of corre-
lation.

If the desired correlation of studies signifies nothing more than a means of remembering certain facts of a subject, it may be limited to incidental references which any good teacher makes in his teaching, and no mention need be made of such references in the course of studies more than to state the fact that in every study the teacher should bring together in the recitation certain related ideas for the purpose of fixing those ideas more firmly in the pupils' minds.

It is asserted by some that a correlation of

studies means only a sequence of studies such as would be made with the ends of education clearly in view. According to others, these views of correlation are insufficient as a guide to education. The mind, they say, naturally unifies the knowledge it receives, and it is the function of the course of studies, as it is of the teacher, to assist nature in this work.

With the notion of incidental association of ideas only in mind, or that of a proper sequence of topics in the study of a subject, the teacher finds it difficult to "assist nature" in following some of our present courses of studies. With these courses only as guides, he might lead his pupils to learn the commercial cities of Europe, the history of Mexico, the names of the planets and the distinguishing characteristics of an orchid, to conjugate the verb "to be", to write a composition upon perseverance, to read about the exploits of John Smith, to perform problems in partial payments, and to spell the names of the diseases,—all to be studied and recited on the same day. This many teachers will say is not an exaggerated record of what they are expected to do in a single day. In other words, the course of studies in many cases is simply an aggregation of subjects put together with no reference to their natural relations. Moreover the burden is becoming more heavy and the trial more perplexing as year by year new studies are added to the curriculum.

The dangers of
a separation
and isolation of
studies.

A true correlation of studies will help to solve the difficulty by furnishing to the teacher helps

Result and
ways of cor-
relation.

both in the unification and in the co-ordination of studies. To accomplish these ends it will be necessary to select the parts of all subjects for a given term or month that have a close relation to one another, and to arrange them in groups that are in some degree co-ordinate; i. e. equally essential as a means of gaining the chief ends of education. There are parts of literature, history, science, mathematics, and the language arts that are clearly connected, logically and psychologically. These subjects should be arranged in a course of studies so that they may be carried on together. It will not be necessary to confine the work of the school to these related subjects, but they should constitute both in kind and in amount the essential work to be done in a given time. That the education may be harmonious or many-sided, at least one subject of each of the great co-ordinate groups of studies must be pursued during the entire school period.

Subjects to be
arranged in
groups.

The wise teacher's practice and needs in his daily work may well determine the character of a course of studies. As has been said, the good teacher always and everywhere recognizes in teaching any subject the importance of bringing to the attention of his pupils all scraps of related knowledge, and of appealing to their experience of every kind which has a vital connection with the subject in hand.

In teaching reading for example the teacher recognizes the fact that reading is but a means of learning history, literature, and science, and therefore these subjects are early brought into

service as a means of securing the immediate ends of the subject which he is teaching. Moreover the proper interpretation of literature demands a minute and widely extended knowledge of many things which are made the subject of study at the time of reading. In geography there are presented constantly the related subjects in various fields of knowledge not commonly regarded as geographical. Even in the teaching of mathematics there are repeated applications which incidentally open to the pupils increased acquisitions in science and art. In all this work the course of studies should be of material assistance—both by leaving the teacher free to teach in the best way and also by helpfully suggesting related material.

Examples of correlation.

It will be observed that this method of correlation implies a method of concentration by which each subject taught is made in turn a central or focussing subject. Many educators while not discouraging such work would carry the idea further by making one subject of study a focussing centre of all others, the central subject being determined by its relative importance as a means of attaining the highest ends of education. The most conspicuous example of this kind of correlation is that furnished by some of the followers of Herbart, who, in making moral and religious culture the supreme end in education, place special emphasis upon history and make that subject the central one to which all others refer. In the laying out of a course of studies upon this plan, the effort is made to place

A concentration of studies desirable.

Herbartian idea of concentration.

the national and religious stages of development in agreement with the corresponding stages of the child's mental development.

History a basis
of correlation.

The same parallelism of racial and individual development is recognized in recent courses which make the history of our country the basis of correlation. Thus in the early years of the child's life in school or when he is 6 or 7 years of age, primitive conditions of life are talked and read about. Stories of exploration and discovery become the centre about which lessons in natural history, geography, and even arithmetic are given. Later, accounts of early settlements are made the centre of interest and of study. Thus in the middle grades the early history of the thirteen colonies is made the basis for the study of North America and of the plants and animals peculiar to that locality, while all help to illumine such masterpieces of literature as *Hiaiwatha* and *Evangeline*.

Industrial
work a basis
of correlation.

Akin to the above idea of correlation is the uniting of the home and neighborhood life with the work of the school so zealously advocated by some educators. Thus useful occupations which represent the products of civilized life are made the basis of the course. In connection with gardening, and making of baskets, rugs, clothing, etc., there is joined much incidental instruction in drawing, measuring, casting accounts, etc., while the pupils are brought into close relation with genuine conditions of spiritual culture.

In all these various schemes of correlation

there will be seen two distinct features: first an appeal to the child's natural interests, and secondly an aid to the preparation for life in the world. The two aspects of life with which education has chiefly to do are the life of the individual as a worker in some useful calling and the life of the individual as a member of society. With the former or vocational end in view we shall make the industrial occupations of the school a centre of study. With the latter, or social end in view, history will take the leading place. But in both aspects there will be recognized the necessity of unifying knowledge as far as possible, and of bringing it into a close relation to service which is alike the end of education and the end of life.

Industrial occupations and history the two centres.

The making of a course of studies.—The features of a course of studies which superintendents should especially consider are: first, the scope or aim and range of subjects to be presented under each group; second, the relation which the subjects of a group bear to one another and to the subjects of other groups; third, the sequence or order in which the various subjects or parts of subjects should be presented; and, fourth, the limitations both in time and substance which should be made in each branch of study.

Four features of a course of studies.

The aim or purpose of a given subject of study may be general and remote, or specific and immediate; a course of studies has to do mainly with the former, the latter aim belonging more to a statement of methods which are supposed to be

Aim and range of subjects.

known by teachers. The range of topics outlined in each branch of study will be determined partly by the aim and partly by the conditions under which the school is carried on,—these conditions being the number of pupils, the number of classes, the length of the course, the number and character of the teaching force. It is understood, of course, that, as “preparation for complete living” is the end of education, so all subjects and parts of subjects that do not contribute to this end are to be excluded from the course.

Relation of
subjects.

The subjects of study should be so placed in a course as to assist the teacher to correlate them in teaching, that is, to present them in right relations, so that each fact of knowledge or information acquired shall be fortified and enriched by others, and so that good habits of thinking shall be encouraged. As far as possible, the relation of each subject to its use, and especially to its use in life, should be indicated.

Sequence of
of subjects.

The sequence or order in which the various topics should be presented is determined by their relations of dependence one upon another, and by the natural order in which the mind acts. The sequence of subjects in a course should not be so marked or finely drawn as to cause the teacher to think more of the relation or dependence of subjects one upon another than of the relation of each subject to the mind and life of the child.

The limitations of any branch of study in respect to time and subject-matter will be deter-

mined largely by the relative importance of that branch or of the subjects of that branch as a means of accomplishing the ends to be desired. Other limitations are those which are determined by the length of the school session and school year and by the number of classes and pupils to a teacher.

Limitations of subjects.

Course in language, including reading, writing, composition and spelling, memory work, English grammar, and one foreign language.

Language is the expression of thought. The term as used in the school curriculum is intended to mean the expression of thought in words. As a subject of instruction, it relates to acquiring thought by means of the printed or written page, and to expressing thought both by speaking and by writing. Language, therefore, includes upon the practical side reading and composition. Upon the theoretical side it includes grammar, rhetoric, and logic, the elements only of which should be taught in the grammar school, and always in close connection with reading and composition. In some schools a foreign language may be taught during the last years of the grammar school course, the subject being offered as an elective for those who can carry on the regular English branches.

Subjects included in language.

1. The immediate aim in language is the power to gain and communicate ideas through written or spoken words. This will involve (a) power to read intelligently and (b) power to speak and write correctly and effectively.

Aim and scope of language teaching.

The reading must include, first, a mastery of

the symbols, that is, learning to read; and, second, such companionship with and study of good literature as shall develop power to understand and appreciate it, to the end of inculcating a strong and lasting taste for the best reading and of developing a fine artistic and moral sense.

Ends in teaching language and grammar.

The power to speak and write correctly and effectively involves, first, the mastery of written and spoken forms in accordance with accepted usage; second, analysis of language to discover the rules of usage; and, third, constant practice in speaking and writing, both before and after such analysis. Effectiveness in writing includes clearness, conciseness, force, grace, and originality.

While the elementary course in grammar has for its chief end correctness of oral and written speech, it may also include some features of effectiveness, such as clearness, conciseness, and force. The most important fact to be kept in mind is that the study of this subject in the grammar school should be elementary and very practical, the aim being to teach principles by which the pupil is enabled, first, to understand the language of literature; and, second, to express his thoughts in some measure as they should be expressed. An incidental but by no means unimportant end in the study of grammar is mental discipline,—a power of the mind to generalize, to make rules from facts, and to apply principles and rules to practice.

2. It is evident that all forms of language as branches of study are closely related to one

another and to nearly all other branches. The forms of expression in the reading books become models for imitation in all departments of composition work, which serves as a means of practice in grammar and rhetoric. The relation of the theoretical side of language to the practical side both in reading and in writing should be indicated by prescribing practice in analysis of sentences and in constant application of the rules of syntax most frequently violated.

Relations of
language sub-
jects.

The work in composition should be closely related to the pupils' thinking; and as the regular subjects of study are supposed to occasion thought, they therefore constitute a good basis for language in the recitation. Moreover, the regular studies, especially geography, history, science, and reading, should constantly furnish topics for composition.

Some of the most obvious relations which the branches of this group have with one another and with other subjects of study are matters of apperceptive teaching, which every good teacher understands, and which therefore need not be indicated in a course of studies.

3. To secure a mastery of forms in language, a certain definite order should be followed. Thus in learning to read, the order is governed by a well-known principle of "proceeding from a vague knowledge of the whole through analysis and synthesis to a clear knowledge of the whole."

Sequence of
subjects in lan-
guage.

While a course of studies may not give the steps by which this principle is observed, it may properly state that the teaching should begin either

with words alone or with words in sentences, and that analysis and synthesis should follow in natural order. It may also state that the first words and sentences should be read from the blackboard, and afterwards from the chart and first readers. The order to be followed at this stage in the selection of reading material is well indicated by the ordinary first and second readers. The order of selection after the pupils have acquired skill in reading should be determined by the tastes and abilities of the children, the selection to be made from given lists of books.

The sequence to be followed in the technique of writing may be sufficiently indicated by stating that during the first two years there should be much copying of good texts, beginning with words whose letters are easily made, as *man* and *cow*, and proceeding by degrees to words more difficult to write. Some courses prescribe much practice with single letters to be taken up in the order of complexity.

In spelling, it appears to be the custom in the best courses to prescribe some oral work for the lower grades, but the main attention, is given to writing words in sentences. The words selected for drill in these grades are to be found in the regular reading books. Beyond the third grade, in addition to the words used in the composition exercises, lists of words such as are found in a good spelling book may be used with profit for dictation, the words to be written both singly and in sentences.

English grammar may be regarded as one of

the few strictly sequential subjects of the elementary course. Each topic should lead up to the next, and all should have distinct reference to the ends already pointed out. The following general outline shows the order which may be pursued in an elementary study of this subject:—

Outline for
English gram-
mar.

(1) the sentence and kinds of sentences defined

(2) subject and predicate, simple and complete

(3) parts of speech

(4) limiting phrases and clauses

(5) nouns—kinds and forms

(6) pronouns—kinds and forms

(7) rules of syntax, respecting the case of pronouns

(8) verbs—kinds and forms

(9) rule of syntax, respecting the form of the verb

(10) adjectives—kinds, forms and uses

(11) adverbs—kinds, forms and uses

(12) prepositions—uses

(13) conjunctions—kinds and uses.

4. The amount that can be done in the various language subjects will depend largely upon the grade and natural abilities of the pupils. In some subjects the exact amount to be done should not be prescribed, while in others the amount prescribed will indicate the least that should be done in a given period, with a provision for sufficient time to permit classes or individual pupils to do as much as they are able to do.

Limitations in
language sub-
jects.

At the end of the second year the pupils

should have so far mastered the symbols of reading as to read easily at sight any ordinary second reader. To accomplish this, several first readers and several second readers should be read through during the two years. After the second year the reading should be carried on in the two lines already indicated, an average of at least ten pages a week of each kind being required in all grades. It should be understood that this is the minimum required, and does not include the amount of reading to be done at home or the extra reading by individual pupils. In most schools probably the limit set is not more than half of what can be well done.

Except in special instances, no set exercises in writing should be given after the fifth year. Whatever is needed to secure legibility and rapidity of writing after this time should be done in connection with the composition and dictation work.

Most of the special instruction in spelling should be given during the first six years. With the exception of occasional reviews, the work in this branch during the last two years of the course should be confined to the correction of words mis-spelled in the composition and other written exercises.

The limits in written language are difficult to define. It is understood that more depends upon the quality of work done than upon the quantity; and yet it is manifestly the latter feature only that can be presented in a course of studies. An average of 10 lines a day of carefully writ-

ten original work during the entire course beyond the second grade, and an equal amount of dictation for instruction in punctuation, spelling, etc., from the third to the sixth grades inclusive, should be the minimum of written work required, it being understood that monthly compositions are to be written by all pupils in the three highest grades. By original work is meant letter writing, descriptions of pictures and objects, narration of events real or imaginary, and all reproductions in which the pupils use their own arrangement of words.

In designating the subjects of this group, no mention was made of memorizing choice selections of poetry and prose. While such an exercise may be classed under reading and dictation, particular mention of it should be made in the course. An average of at least 10 lines a week should be required to be memorized by pupils of all grades, it being understood that the selections memorized shall be of a high order of literary merit, and adapted to the capacity of the children.

Reference has been made to the necessity of limiting the study of grammar in the grammar school to the elements of the study and to its use in analysis and syntax. Only those properties of the parts of speech should be required to be learned that are needed for analysis of sentences and for a proper understanding of the rules of syntax. These rules should be limited to rules which are most commonly violated. Not more than 10 rules should be made and

learned, but they should form the basis of constant practice in the construction of sentences. These and other limitations of the subject appear in what has been said upon the sequence of topics to be studied.

Where there are so many branches in a group as are included in this group, it may be well to designate approximately the amount of time to which the recitation in each branch should be limited. If, for example, the amount of time allowed for the language group of studies in the various grades ranges from one-fourth to two-fifths of the entire school time, the allotment for each branch of the group might be as follows:

Time programme, showing the number of minutes a week spent in recitation by a pupil in reading, writing, spelling, composition and grammar.

SUBJECT	Sub- pri- mary	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
Reading ..	198*	190	190	150	120	120	120	120	120
Spelling ..	} 100 {	50	50	50	50	50	} 200 {	160	160
Writing ..		60	60	75	60	60			
Comp'tion	50	78	78	96	90	90	} .. {	100	100
Grammar ..	..	..	..	..	..	..
Totals ..	348	378	378	371	320	320	320	380	380

* Including story-telling.

It should be understood that the above figures are only tentative and approximate, and are given merely to show how an apportionment may be made under given conditions. It should be understood also that the time given is the recitation time only of a pupil or group of pu-

pils, and that the time occupied outside of recitation in copying or composing is not counted in the above schedule. One advantage in the way of time saving which composition, spelling and writing have over some other subjects should be taken into account, and that is the practicability of having all the pupils of a school recite together.

Course in mathematics, including arithmetic, form and geometrical exercises, algebra, and bookkeeping.

1. Mathematics, or the knowledge of quantity and space relations, is taught both for its practical and for its disciplinary value. In the elementary schools it is taught mainly as an art, although the foundations of mathematical science are laid throughout the grammar school course, and in the upper grades something of the science itself is taught. The department of mathematics chiefly pursued in the elementary schools is that of arithmetic,—the elements of geometry and algebra being taught in the upper grades. To these is added a simple form of book-keeping, which may be regarded as an extension of the practical side of arithmetic.

Scope of mathematics.

Arithmetic is a knowledge of numbers, their expression, relations, and operations. The numbers to be learned are integral and fractional, simple and denominate. So much of this knowledge should be acquired as will help the pupils to solve all the ordinary problems of daily life, and at the same time serve as a means of mental discipline. The scope of arithmetic in

Arithmetic.

successive grades will be determined largely by the power of the pupils to grasp new relations and conditions. In recent courses a broad basis of subjects has been prescribed for the lower grades, including fractions (both common and decimal), percentage, and measurements. The two kinds of work,—computations with abstract numbers and work in practical problems,—should be presented in all grades, the amount of the former decreasing and of the latter increasing in successive grades.

Geometry.

The aim of geometry in the grammar school is chiefly to supplement the course in arithmetic, and to furnish a good basis for instruction in mechanical drawing and manual training. The work required should be both constructive and inventional, supplemented by as many simple demonstrations as circumstances will permit, the aim being to make the work as practical as possible.

Algebra.

The design of algebra in the grammar school is to give pupils a general idea of numerical relations and operations. Besides furnishing short and easy solutions of problems which are by arithmetic quite difficult, algebra gives pupils the power to state in general terms the conditions of a problem and the process of its solution, and thereby to deal with formulæ and rules more easily than by arithmetic. Moreover, the elementary work in algebra may be so arranged as to give support to the higher form of the study in the high school.

Bookkeeping may be regarded as only one of

the many practical applications of arithmetic. Its end in the grammar school is ability to keep accounts which would be ordinarily needed by a farmer, mechanic, or small retail shopkeeper. Incidentally there will be acquired in the study some knowledge useful in higher forms of book-keeping.

Bookkeeping

2. The close relations of the various departments of mathematics to one another are apparent. So close are these relations in the early stages of algebra and geometry that the subjects may be said to be continuous rather than discrete. This is especially true in many kinds of practical work in which arithmetical processes are shortened by the use of algebraic symbols, and are practically applied in geometrical measurements.

Relations of the various departments of mathematics.

The relation of the subjects of this group to other subjects of study is not so close as to make it necessary to bring them together constantly. Yet the facts of geography, history, and elementary science may be sometimes employed in arithmetical operations, to the advantage of all the subjects involved.

3. While it is true, as has been said, that there should be a broad basis of subjects in the lower grades in the operations to be performed with numbers, there is a progressive order which should be prescribed in a course of studies. This order has to do with the relative complexity of processes and also with the size of the numbers. In integral numbers, the work prescribed should be in successive steps, as follows: (a)

Sequence of
work in arith-
metic.

from 1 to 10, (b) from 1 to 20, (c) from 1 to 100, (d) from 1 to 1,000, (e) from 1 to 1,000,000, (f) unlimited. In fractional numbers, the fractional parts of numbers should be taught almost from the beginning, and proceed in the third grade with fractional units, using in succession halves, fourths, eighths, thirds, sixths, twelfths, ninths, fifths, sevenths, and elevenths. Decimals begun as early as the fourth grade should be taught by steps from tenths, hundredths, and thousandths, which are the only decimals used for one year, to decimals of a lower denomination. Denominate numbers should be taught from the very beginning, the order of instruction being generally from measures most familiar to those that are less familiar.

The order of teaching numbers of all kinds should be first with objects and afterwards without objects, and also first without figures and afterwards with figures; the warning being given that too much dependence should not be placed upon aids, either by using the objects too long or by employing figures unnecessarily in the solution of problems.

The sequence of steps in algebra and geometry will be indicated later, when their limitations are treated.

4. The time allotted to arithmetic should be given mainly to what may be called the essentials of the subject, or to such work as will be found useful in everyday life. The following topics will indicate the degree of restriction that may be made:

(1) correctness and rapidity in adding, subtracting, multiplying and dividing;

Limitations of arithmetic.

(2) ability to work without the aid of figures in all operations, to 100 in whole numbers, to twelfths in common fractions and to thousandths in decimals;

(3) knowledge and skill in the use of such denominate numbers as are used ordinarily in buying and selling and in keeping accounts;

(4) knowledge of percentage and of the simple applications of percentage, such as are needed in ordinary business affairs;

(5) knowledge of geometrical measurements, so far as to perform problems involved in the ordinary affairs of life.

It should be understood that if more is done than is comprised in the above outline, it should not be at the expense of thoroughness in these subjects. It is believed that a large part of this work can be done in the first six grades. During the last two grades one or two lessons a week might be given to the more difficult problems involved.

The geometrical exercises of the grammar school should be limited to work in mensuration carried on in connection with arithmetic, and to exercises of a concrete and experimental kind. The following outline in mensuration, followed in the Springfield, Mass., course, sufficiently indicates the needed limitations of this part of the subject:

Limitations of geometry.

A. Surfaces.—(1) Parts, (*a*) number of sides,

(b) relative direction of sides (whether parallel, perpendicular, etc.), (c) angles.

(2) Comparison with other surfaces as to (a), (b) and (c).

(3) Length of perimeter or circumference.

(4) Area.

B. Solids.—(1) Parts, (a) number of faces, (b) kinds of faces, (plane or curved), (c) number of edges, (d) relative direction of faces (whether parallel, perpendicular, etc.

(2) Comparison with other solids as to (a), (b), (c) and (d).

(3) Length of all the edges. (4) Surface area.

(5) Volume or solid contents.

The limitations of work prescribed in experimental and constructive geometry should not be too strictly drawn. The better way will be to present an outline from which teachers may select work adapted to the ability of their pupils. Such an outline may include:

(1) definition of volume, surface, line, angle

(2) definitions of various kinds of lines

(3) definitions of various kinds of angles

(4) division of line into any number of equal parts

(5) construction of angles of various magnitudes

(6) definitions of various kinds of triangles, parts, etc.

(7) problems relating to angles and sides of triangles

(8) definitions of quadrilateral and kinds of quadrilaterals

(9) problems relating to angles and sides of parallelograms

(10) definitions of pentagon, hexagon, heptagon, etc.

(11) problems relating to the construction of polygons

(12) problems relating to the division of polygons

(13) problems relating to the construction of similar polygons

(14) definitions of circle and parts of circle

(15) problems relating to diameter, circumference, arc, chord, secant and tangent

(16) definitions of various kinds of volumes

(17) problems in relation to the surfaces of volumes

(18) problems in relation to the solid contents of volumes.

The problems indicated in the above outline may be either concrete and constructive, or demonstrative, depending upon the ability of a class or of the individual pupils of a class.

If the purposes of algebra in the grammar school are as indicated in a previous paragraph, its limitations might be somewhat as follows:

(1) algebraic notation

(2) simple arithmetical problems, solved by algebra

Limitations of algebra.

(3) addition, subtraction, multiplication and division

(4) factoring of simple algebraic quantities

(5) reduction of fractions

(6) resolving of equations containing one and two unknown quantities

(7) practical problems involving the foregoing.

Course in elementary science, including nature study, geography, physiology and hygiene, information lessons relating to science, geography, and physiology and hygiene.

1. The immediate end of all the studies of this group is a knowledge of nature, including man and all that is below man. The term nature study in recent years has been made to cover the study of plants, animals, and minerals, and the elementary work done in physics and chemistry. This group also includes physiology and hygiene and geography.

What is included in nature study.

While it may be necessary in nature study to lead the pupils to learn through observation the facts of nature, they will learn them not for their own sake, nor mainly for the use they will make of them later in the study of science, but for the habits of observation which the lessons will help to form and for the abiding love of nature which they will help to arouse. These two ends, therefore, the formation of habits of observation and the arousing of a love for nature, will determine largely the character and extent of the study. It will include in their appropriate season the observation of minerals, plants and animals, and some of the more apparent physical forces.

These observation lessons will fail to produce the desired ends if they stop with a knowledge merely of what is observed. The interpretation

of phenomena is of more value than the mere observation of them as facts. The adaptation of parts of animals and plants to the uses they perform will early become an object of inquiry. It should be observed that while a love for nature is the primary end of nature study, it cannot be reached by simply talking about the objects observed. Such lessons may drift into mere sentimental reflections of little value. The facts must be learned not by reading or hearing, but by observing, and those facts should be reviewed frequently enough to be readily brought to mind.

The study of physiology and hygiene includes in its scope such knowledge of the anatomy of the body and the uses of the various parts as will help the pupils to have respect for the body and to keep it in health and strength. Practicalness of aim in this study should be paramount, especially in the direction of forming good habits and of preventing bad ones.

Scope of physiology as a study.

Through the study of geography the pupils acquire a knowledge of the earth as the home of man. There are two elements, therefore, of this branch of study; first, nature, in making the earth suitable for human habitation; and, second, the people, in making it a place in which all the activities of life are carried on. So far as possible, the pupils' knowledge of the earth should be interpretive knowledge, or knowledge by which they may understand the relations to human life of its various features, such as climate, surface, soil, etc.

Two elements in geography.

2. The facts acquired in nature study are

Relations of
the subjects in
elementary
science.

closely related to the primary facts of geography; indeed, many of the facts of nature study and geography are identical. The subjects of study in these two branches should therefore be arranged in the course with reference to purposes of correlation; and where it is possible the relations should be made to appear, as, for example, the effects of running water as a topic of nature study, and the study of relief forms as a topic of geography.

The relations also of one or both of these branches to arithmetic and history should be indicated. Probably no subjects in the course will be found to be more serviceable for composition and for drawing than these. If such relations are not indicated in the course, opportunity at least should be afforded for abundant practice in expressing by various ways the facts acquired.

Comparative
anatomy and
physiology.

In the lower grades resemblances and differences of the human structure and that of the lower animals should be objects of study, and in the higher grades the connection of the facts of anatomy and physiology with those of chemistry and physics should be made to appear. In all grades the relation of parts of the body to their uses and of the uses to health and strength should be shown.

3. The allotment of work in nature study to be done in a given time, whether it be for a year or a day, should be determined by the pupils' natural powers, both of observation and of interpretation. With young children, little is

gained by establishing a fixed order of presentation. In general, it may be said that the observations should be made first "in the large" and afterward more minutely; but if children are interested in the parts of an object very early in their observations attention should be given to them, especially if the interest centres in the uses of the parts. It is always a safe rule to teach those things which will best serve as interpreters of other things of value for the child to know. On the same principle, a clear and definite knowledge of home surroundings is necessary to a proper knowledge of distant features and conditions. A knowledge by observation of a hill range will be the means of interpreting the distant mountain range described in the book. As far as possible also the logical order should be followed in teaching the various topics. The situation and surface of a continent or country may determine to some extent the climate and rainfall,—a knowledge of which helps the pupils to infer what the productions and the occupations of the people are.

Sequence of subjects in nature study and geography.

In anatomy and physiology, the practice in the best schools of deferring the teaching of the internal structure of the body until the later years of the grammar school seems wise; as also is the practice of making domestic and public hygiene a prominent feature of the course in the upper grades of the grammar school and in the high school.

Topics in anatomy and physiology for higher grades.

4. In determining the amount to be done the two chief ends of nature study should be kept

Ends and limitations of nature study.

in mind. To form good habits of observation and to acquire a love of nature, there should be no forcing of acquisition. In no study will it be found more necessary to be led by the natural aptitudes and desires of the children than in the study of plants, animals, and minerals. While it may be well to lay before the teachers a wide field for observation, it should be understood that such selection of the work assigned may be made as will be best suited to given conditions. Again a broad range of topics will furnish the needed extra and optional work for some pupils already spoken of.

Limitations in the study of anatomy and physiology.

Strictness in limiting the study of anatomy and physiology to practical ends should be carefully observed. No subjects should be taught which are not clearly seen to have some bearing upon every-day life.

Course in history, including biography and civil government.

Place and scope of history.

1. The place and scope of history as a branch of study have materially changed in recent years. Instead of occupying, as it once did, a small part of the last year or two of the grammar school course, it is now in the best schools begun in the first year and carried on throughout the course; and, instead of being a dry and profitless study of wars and dates, it has come to be regarded as a study both pleasurable and useful as a means of culture. According to this later view of the subject, its purpose from the first should be to inspire the pupils with high

ideals of life, both as citizens and as members of society.

Moreover, to lead the pupils to acquire a taste for history, the subject should be made interesting from the first. Myths, fairy stories, and stories of semicivilized and colonial life should be told to and read by the children in the lower grades, to be continued each year by the reading of stories of biography and of American history in chronological order in the middle grades, and by the study of English and American history in the higher. All phases of social, civil, and institutional life are to be presented to the children in forms suited to their interest and capacity. Thus we see that history, which is a record of the growth of a people from their earliest to their present state, includes biography and civil government as well as history proper.

2. As history teaches all sides of life, it stands in close relation to all the other studies of the school which are supposed to be a preparation for life: to arithmetic, in furnishing material for computations; to science, in showing the analogies of the evolution of the race and that of the individual; to geography, in the use of charts and maps, and in furnishing a basis of comparison whereby the present conditions of social and civil life are better known; to literature, in providing the basis of much of the finest forms of the oration, the ballad, the drama and the epic; and to drawing and language, in awakening thoughts that deserve the pupils' best efforts of expression.

Relation of
history to other
studies.

While most of these relations cannot appear in a course of studies, they must be considered in giving history its proper place. In literature especially should the close relation of history be recognized in the course of studies. There are phases of history that can best be known through literature, as there are forms of literature that can be fully interpreted only by a knowledge of history.

Sequence of
subjects.

3. While the order of topics will depend somewhat upon the interest and capacity of the pupils, there is now a generally recognized order of presentation which should be embodied in a course. The first year or two may be given to the telling and reading of folk-lore and fairy stories, myths and fables. These should be followed by reading stories of Indian and early settlement life, supplemented by biographical stories. As soon as the pupils are ready for it, and before the consecutive reading and study of American history are begun, attention should be given to interesting facts of local history, such as scenes of celebrated events, early settlers, and well-known traditions. Consecutive topical study in connection with the reading of both American and English history should be prescribed for the last years of the course.

4. The limitations of subject-matter in history should be determined largely by the limitations of time and by the demands of other subjects. Not even a minimum of requirements should be prescribed, so far at least as such requirements are made a basis for marking or examinations.

In this, as in no other subject, may the amount read and studied be adapted to the abilities of each individual pupil. If the work required to be done be given out and recited by subjects or topics, each pupil may learn as much of each subject or topic as time and ability will permit. The course therefore should be so arranged as to permit the greatest degree of freedom in teaching the subject. If this is done, and examinations have their proper place, the teachers alone will be responsible if the pupils have not a loving interest in the subject, not only while they are being taught, but also after they have left school.

Limitations of subject matter in history.

Course in drawing, industrial training, singing and physical culture.

1. In no branch of instruction has there been a greater change of place and scope than in drawing. Twenty-five years ago the number of public schools in which drawing was systematically taught was very small. Now the schools in which it is not taught are as rare as were the schools formerly where it was taught.

At first the cultivation of the æsthetic sense was considered the only end to be sought, and it was in some way thought to be reached through drawing endless castles and rustic mills from flat copies. Later, the dominant purpose seemed to be to make the subject as practical as possible. This was effected by the introduction of mechanical drawing, which had little relation to practical mechanics, and which was generally a laborious and tedious process to all

Purpose and function of drawing as a study.

concerned. Gradually these two ideas of the purpose of drawing as a branch of study have been supplemented by a third, which is that drawing is educational, and serves to train all the powers of the mind.

As such the subject has its strongest claim for a place in the programme. With this later idea of the function of drawing have come improved methods of teaching the subject, which serve to accomplish in good ways the ends that were formerly sought: of æsthetics, by leading the pupils to draw and to use colors in imitation of nature and to appreciate by observation and study the most beautiful works of art; and of practicalness, by drawing free-hand from objects, and by connecting closely the mechanical part of the subject with the work of manual training and with the every-day uses of life.

If by industrial training is meant the careful observation of and practice in the various industries of the home and community we can readily see its extended scope as including all those subjects of study which are in any way related to vocational service, especially to service that can be rendered with the hands. The best manual training is no longer confined to working in wood nor is its end merely discipline or dexterity in the use of tools. As a school study it is preëminently practical, helping alike to train the mind and to prepare for life. Its claims to a place in the course of studies are:

- (1) it teaches dexterity of hand
- (2) it trains to habits of order and neatness

Claims of industrial training.

(3) it cultivates a sense of truth and right by demanding exactness of details

(4) it cultivates the will in its requirements of persistence until an object is completed

(5) it serves as a valuable aid to drawing and art studies

(6) it cultivates the ethical sense in enabling pupils to make useful objects

(7) it serves to offset the strain of intellectual work

(8) it encourages respect for manual labor.

The reasons for making singing a regular and systematic subject of instruction are that it affords rest and recreation, is a means of healthy exercise, and cultivates the æsthetic, ethical, and religious sense. Governed by these ends, the aim and scope of singing as a subject of instruction are clearly (1) to train the ear so as to appreciate and enjoy good music; and (2) to understand and be able to sing at sight any ordinary secular or sacred piece of music.

Purpose of instruction in singing.

2. The relation of drawing to manual training is so close that each may be said to be incomplete as a subject of instruction without the other. Both subjects also are closely connected with geometrical measurements. Drawing as a form of expression is closely related to every other subject of study: to literature in illustrated sketches, to arithmetic in plans and working drawings, and to history and geography in diagrams and maps. In fact, it may be used as other forms of expression are used, and in some cases it may be used profitably when other means

Relation of drawing to other subjects.

fail to express the thought or feeling. The broadened scope of industrial training as a subject of study gives it a central place in the school programme. Other subjects like arithmetic, language, geography, and elementary science may be closely related to it and be enriched by it.

In the lower grades the placing of singing in close relation to the reading and nature exercises and to the morning talk is made very effective.

Relation of
singing to
other subjects.

The use of singing tones has come to be recognized as a valuable means of securing good speaking tones, just as the phonic exercises in spoken tones have been found helpful in developing a good singing tone. Singing is also beneficial in connection with some of the physical exercises in the lower grades.

3. Skill in the subjects of this group, as in all technical subjects, will depend upon the fidelity with which the successive steps are taken. Nowhere is a close application of the maxims "from the known to the related unknown" and "from the simple to the complex" more necessary than in connection with these subjects.

Sequence
of steps in
drawing.

In the early stages of drawing as at present pursued there is a free expression of ideas through illustrative sketching without reference to principles. Attention is then given to form with special reference to correct proportion and outline, succeeded by exercises which give skill in rendering characteristic detail. Finally, there is sought to be secured a full and free expression of grace of form and harmony of color.

In the mechanical side of drawing the successive steps are:

(1) exercises in precision, as paper folding and cutting

(2) exercises in accurate measurement

(3) accurate drawing of surfaces of given dimensions

(4) conventional grouping of figures to express solidity

(5) drawing to scale.

So far as the occupations of the kindergarten are educative, they are but the beginning of a series of manual exercises which should have no break throughout the elementary school course. In the earlier stages of the course, paper and card board should be extensively used, and always in close connection with drawing, for the purpose mainly of developing manual dexterity. In the later stages exercises to teach the use of tools should be given, and applications of what has been learned should be made in the manufacture of useful objects.

Progressive exercises in manual training.

In singing, care should be observed that the steps of technique be taken in a natural order, and that the demands upon the children keep pace with their vocal powers and musical appreciation.

A natural order in singing.

4. Within the scope and time already laid down, there need be given no limitations in drawing and manual training beyond what is necessary under a class system of instruction. Here, as in other branches, the minimum of what is expected to be done may be prescribed,

A minimum of work in drawing and manual training.

together with extra or extended work to suit the circumstances.

Limitations in singing.

Limitations in singing should be made in two directions: first, in respect to the time of learning the language of music; and, second, in respect to reach of tones. Before the language of music is learned the child needs to acquire a musical sense; that is, a love for and appreciation of music. For this reason two or three years of careful practice in simple phonic exercises and rote songs should be spent before sign reading is begun. Such exercises are also needed for a proper development of strength and sweetness of tone. The danger of overstraining young children's voices is avoided by confining the exercises during the first year to the lower tones.

The advantages of class instruction.

The classification and promotion of pupils.—The classification of a school is made upon the theory that a group of pupils of nearly equal ability can be taught more effectively together than separately. There is an undoubted saving of time in the presentation of facts or in a teaching exercise with a number of pupils together over the same exercise repeated to individual pupils. In addition to this advantage of classification there is the benefit of increased interest which is always felt in the contact of pupils with one another.

Two ways of classification.

There are in general two ways of classification—first, that of measuring off what it is thought pupils can do in given periods of time and putting them into corresponding groups;

and secondly that of separating the pupils according to ability into groups of a desirable size and allotting the work of each group. By one method there is a fitting of the pupils to the work required and by the other there is an adjustment of the work to the pupils.

It can be readily seen that a formal following of the first named plan both in classification and promotions from class to class may be very simple and smooth in its working. To the school official whose eye is upon the machine only it is all that can be desired. If there are eight or nine classes each with a year's work to do, the method of promotion is simply to put forward those who have passed the requirements, and to "keep back" those who have not passed the requirements.

A faulty
method of
promotion.

The ideal of mechanical smoothness is reached when the test of fitness for a higher class consists solely of passing an examination given by the school board or superintendent. Those who have attained the standard set of seventy or eighty per cent may go on and take up the subsequent work. Those who have fallen short of such a standard by one-half of one per cent must repeat the work of the year. Such formerly was the method pursued in many places and in some essential features is still pursued.

The possible unfairness of the test of a single examination has caused many superintendents to modify and extend the test so far as to give the pupils a better opportunity to prove their fitness to do the required work. In recent years

Promotions
based upon
single exam-
inations.

other serious defects of prevailing methods of promotion have become apparent and many attempts have been made to meet the difficulties of adjusting the work to the needs of individual pupils. But under the best plans of promotions there are such inequalities of attainment in every large class that it is found very difficult if not impossible fully to meet the needs of individual pupils. The duller or slower pupils of a class are either unduly stimulated or discouraged by the demands placed upon them, while at least some of the brighter or quicker pupils are being repressed and insufficiently employed. The following brief statement of plans taken in part from actual experience will indicate how the objections to class promotions may in a measure be overcome and will illustrate ways of adaptation to circumstances.

Plan A.—Two sections, six months apart in attainments are placed in a room under a teacher, the advance section being designated A and the other B. These sections recite together in some subjects, such as singing, drawing, and nature study, while other exercises are given to the sections separately. If thought best by the teacher, worthy pupils of the lower section are permitted to do some of the work of the upper section with the expectation of passing into the next higher class with the latter named section. In some instances also, for the purpose of gaining time, pupils of one room are permitted to recite in one or two subjects with the pupils of a higher grade or class.

Two sections
five months
apart.

One month before the close of a semester, teachers are asked to give to the superintendent of schools or supervising principal a list of pupils of whose promotion there is no doubt, another list of pupils whose detention in the section for another half year is also unquestionable, and a third list consisting of those whose place during the next semester is, in the opinion of the teacher, uncertain. During the last month of the semester the superintendent or principal gives special attention to the last named list of pupils, questioning them upon important points, and under his direction all the teachers of each grade prepare examination questions for the doubtful pupils. The results of this test, together with the impressions of the teacher and superintendent, help the latter to determine whether the doubtful pupils shall be promoted unconditionally, or be required to repeat some or all of the last semester's work, or be permitted to pass into the higher section on probation for one month. It should be said that throughout the course special notices are sent to the parents of those pupils who are falling behind in their work. By this means the active assistance and co-operation of parents are secured. It will be seen that pupils under this plan are given an opportunity to do their best, and that not all the pupils are made to fear examinations which have to be passed by a few only.

The case of doubtful pupils only considered.

Plan B.—The interval between the grammar grades is one year in length, each primary grade being divided into sections according to the abil-

Intervals between grammar grades one year.

ity of the pupils. As there are three or more sections in each primary grade, the intervals between the classes there are so short as to permit frequent transfers from one class to another, the section rather than the grade being the unit of promotion. The nominal time for the completion of the primary school course is three years, but many are able to complete it in much less time.

Allotted work for year gone over in five months.

In each of the grammar grades the essential features of the entire work prescribed for the year are taken during the first half year, and those pupils who have successfully performed the work, especially in such sequential subjects as arithmetic and grammar, at the end of the half year are promoted to the next higher grade. During the second half year a more minute study of the topics in language and arithmetic already pursued is made, by which an opportunity is afforded for new pupils to do the work of the grade, and for those who have done it imperfectly to review it. By this plan bright pupils are given the opportunity of passing through two grades in one year. All promotions, special as well as regular, are made under the supervision of the superintendent, the teacher's judgment being a large determining factor.

Progress in sequential subjects, the basis for promotion.

Two characteristics of this plan are noticeable—first going over the allotted year's work in some subjects during the first half year, and secondly making the sequential subjects the chief guide in determining promotions.

Plan C.—The sub-division of classes men-

tioned in plan B is carried into the grammar grades, so far as to enable pupils in all schools to pass easily from one grade to another. The yearly programme of studies is placed before each teacher, mainly as a guide to the order of work to be followed. If one of the sections is able in a given time to take up a portion of the work allotted to a subsequent year, it is permitted to do so, the teacher into whose hands the section goes beginning after necessary reviews where the previous teacher left off. Reliance is placed almost wholly upon the teacher's judgment as to the amount of work to be accomplished in the given time and also as to the ability of pupils to take up the subsequent work. By this plan a greater or less departure is made from the yearly standards of work allotted, and increased opportunity is afforded for individual promotions.

Short intervals
between
classes.

Movable limits
in grades.

Plan D.—Each grade of the primary school, covering three years, is separated into groups as in Plan B. The grammar school course covers six years' time of pupils of average ability. A few weeks after the pupils enter the grammar school, in September, they are separated into two divisions, according to ability, one division called grade A, and the other division called fourth grade. The pupils of grade A move forward with the aim of completing the prescribed grammar school course in four years, succeeding grades being called B, C, and D. The pupils of the fourth grade go forward more slowly, aim-

Three rates of
speed in per-
forming the
same work.

ing to do each year only one-sixth of the work prescribed for the grammar school.

The grades of these pupils in succeeding years are known as fifth, sixth, seventh, eighth, and ninth.* At the beginning of the second year the pupils of what was grade A, now called grade B, go into a room with pupils of the sixth grade. During the first part of the year the pupils of the sixth grade are in advance of the pupils of grade B, but, owing to the superior ability of the latter division, they all come together during the latter part of the year. At the beginning of the third year precisely the same conditions exist as existed at the beginning of the first year. The pupils of grade C recite with the pupils of the seventh grade for a few weeks, when a readjustment is made, the abler pupils moving on at a pace sufficiently rapid to finish the course in two years, leaving the others to finish it in three years.

The fifth grade pupils are alone in a room under one teacher during an entire year; the same is true of the eighth grade pupils. In all other rooms there are two grades or divisions, one belonging to the four years' course and the other to the six years' course.

A pupil who begins with the fourth grade and remains in the slower division to the end of the course will graduate in six years, unless he has

*If there is a sub-primary class consisting of two or three groups of pupils, the grades in the primary and grammar school will be numbered from one to eight.

to repeat. A pupil who begins with grade A and remains in the more rapid divisions to the end of the course will graduate in four years. A pupil at the end of the sixth grade or of grade B may go on with a division which will enable him to complete the course in five years.

All promotions both from the grammar to the high school and from grade to grade are made by the class teachers, under the direction of the principal and superintendent. No pre-announced examinations are given, but there are frequent written reviews given by the teacher, the results of which help to determine the fitness of pupils to go forward. One feature of the plan which has helped it to succeed is that of the employment of a special teacher in each building, whose business it is to assist pupils who are behind in their classes in any studies, or who are trying to get into an advanced class. This assistance, however, is no essential part of the plan. It may properly be used with advantage in carrying out any plan.

Promotions
made by class
teachers based
upon work of
pupils.

By this plan it will be seen that the entire grammar school course may be finished in four, five or six years, depending upon the strength or ability of the pupils, and all without the omission or repetition of any part of the course. The plan can best be carried out in large schools; but the essential features of it may be adopted in a school of two or three hundred pupils of the grammar grade.

Plan E.—Each class or grade of pupils is divided into three or four sections in the most im-

Class divided
into three or
four sections.

portant subjects only. In all other subjects the sections of a room are heard together in recitation. The sections go forward as rapidly as they are able to go independent of grade requirements. Individual pupils are placed at any time in such sections as will enable them to work to the best advantage to themselves, especially in such sequential subjects as reading and arithmetic in the lower grades and grammar and arithmetic in the upper grades.

Grading and
thoroughness
applied to but
few subjects.

By this plan grading and thoroughness are made features of a few subjects only, all other subjects being taught quite independent of grading or of amounts required. This plan affords great opportunity for individual promotions.

The needs of
individual
pupils met.

Plan F.—Promotions in the primary school are made without regard to fixed dates. The half yearly interval between classes exists after the fourth year, two classes being admitted into the high school each year. Much dependence is placed upon class management to meet the needs of individual pupils. Minimum requirements are made for each class in every subject. When these requirements are met by a pupil in any subject, he is excused from recitation in that subject for a longer or shorter time with the understanding that he will spend the time thus gained in meeting the requirements of other subjects in which he is interested.

In many cases the responsibility of deciding how the extra time shall be spent rests upon the pupils, their needs as well as their interest being considered. The amount of time taken from a

given subject varies from a part of a recitation to a dozen or more recitations. In some cases, notably when a pupil enters from another school in which he has covered a part of the required work, he may be excused from an entire term's recitation in a given subject, the extra time being given to working up some subject in which he is behind the class.

Time taken from one subject and given to another.

Besides offering a good opportunity for frequent special promotions the plan gives additional study time in school to some pupils, allows time for the teacher to give special attention to pupils who most need attention, affords opportunity for pupils to develop their latent powers, and helps to encourage independence and a feeling of responsibility in pupils.

Frequent special promotions.

Departmental instruction.—By departmental instruction is meant the instruction by one teacher of the pupils of two or more grades or schools in one subject of study or in one group of subjects. This plan, which is quite extensively followed in high schools, has been tried to some extent in the elementary schools, with varying degrees of success.

Among the advantages claimed for it by those who have tried it are (1) better adaptation of work to the tastes and abilities of teachers, (2) a better preparation for and greater intelligence in the work on the part of teachers, (3) increased interest in the studies on the part of pupils.

Advantages of departmental work.

The disadvantages of the plan as viewed by some observers are (1) a tendency to narrowness and irresponsibility on the part of teachers, (2)

Disadvantages.

laxity of discipline, (3) a decreased opportunity and inclination on the part of teachers to correlate the studies, (4) lessened opportunity for teachers to become acquainted with individual pupils and to meet their needs.

Departmental instruction in special branches.

Present experience seems to indicate that departmental instruction is more generally approved in such subjects as drawing, singing, and physical culture than in the so-called regular studies. But as this preference is due largely to the fact that regular teachers are not as a rule well qualified to teach the subjects named, there is reason to believe that all subjects of the curriculum will be treated in the same way when teachers become thoroughly prepared for their work.

Grammar schools and high schools compared.

From a theoretical standpoint, it would seem that some of the advantages of departmental teaching which are quite generally admitted to exist in high schools must be gained by such teaching in the grammar schools. It is claimed by some that the difference of conditions in the two kinds of schools ought not to be so great as to warrant a wholly different plan of classification and teaching. It is true that the treatment of subjects should be very broad in the lower grades and that increased specialization is demanded in the higher grades. From this it might be argued that it would be better for one teacher to give instruction in several branches to pupils of the lower grades than for the subjects to be apportioned among several teachers. But this argument would not prove that there can be no

profitable specialization in the elementary schools. Certainly it cannot justify a sudden and radical change of plan in the beginning of the high school course.

There is little doubt of the desirability of having one teacher for all subjects in the lower grades of the elementary schools. By continued contact only can the teacher become thoroughly acquainted with the children and their needs. On this account the teacher should be with the same class of pupils if possible a longer time than one year, a plan quite as useful for the regular teacher as for the departmental teacher.

One teacher for all subjects in lower grades.

As the pupils advance they might gradually come under departmental instruction. For example in the fifth or sixth year one subject might be taught by a teacher other than the regular teacher, and in the following year one or two more subjects might be treated in the same way. By such a course the regular teacher would have a gradually lessened charge of his pupils, until in the highest grade a minimum of seventy or seventy-five per centum of time is reached in which he is in his own room.

A limited amount of departmental teaching in upper grades of grammar schools.

It would seem that a proper adjustment of work would warrant a teacher's having only one subject or two closely correlated subjects to teach outside of his room. The one or two special subjects might very properly be given in grades quite near to the grade of pupils over whom the teacher has regular charge. For example the teacher of a seventh grade might have charge of the geography in the sixth, seventh and

Possible methods of departmental instruction.

eighth grades; or the teacher of an eighth grade might have charge of the drawing in the three highest grades.

Subjects for
specialization.

As to a choice of subjects for specialization several circumstances should be considered, the first being the special choice and ability of the teachers. In a large building or in a group of schools, the teachers are likely to differ greatly in natural and acquired ability, and therefore each teacher should be given as far as possible that subject to teach in two or more grades which he can teach best.

Again those subjects should be selected for departmental instruction which are the most technical, especially if there are no special supervisors for those subjects. Such subjects as music, drawing, penmanship, nature study, and physical training involve points of difficulty which can be worked out to best advantage by one who gives special attention to them.

Again it is sometimes advisable to select those subjects for departmental instruction which are not closely graded and which may be taught to two or three grades of pupils at once. The subjects above named are, on this account, to be preferred for special teaching to those subjects which may have to be taught by grades or sections. Moreover if the special teacher takes an entire school or room of pupils to teach, there is less likely to be laxity of discipline than when the same class of pupils have to be taught in sections.

To prevent a too great specialization of teach-

ing and to facilitate the needed correlation of studies, there should be frequent consultations of teachers for the purpose of laying out the correlated subjects and of apportioning the time and work so that each subject shall have its proper share of attention.

Needed safeguards.

Child study.—Every superintendent and school board feels obliged sooner or later to consider how far the pupils of the schools are to become subjects of inquiry respecting their condition of body and mind and the circumstances under which they are carrying on the work of the schools. There can be no question as to the desirability of making such inquiry on the part of teachers as will enable them to reach most efficiently the needs of each pupil. It may be said that this is already done by good teachers, but even good teachers need the direct assistance and coöperation of the supervising authorities fully to accomplish the ends most desired.

The need of child study.

The most obvious need of individual inquiry is in respect to the physical condition of the pupils. Extended investigations have revealed the most alarming physical defects in the pupils of all grades of schools, especially defects of sight and hearing.* Without a knowledge of hygienic conditions and physical defects, teachers cannot properly meet the needs of their pupils either of body or of mind. To such ignorance more perhaps than to any other cause may be attributed the continuance and too frequently the increase

Individual inquiry respecting the physical condition of pupils.

*For reports of investigations respecting the sight and hearing of pupils see Appendix F.

of physical ills, while on account of it some of the modern mistakes of both over and under pressure may be due. It becomes advisable therefore for provision to be made whereby all the essential facts shall be ascertained respecting the sight, hearing, and general health of all the pupils. This should be done by the teachers under expert direction and the facts should be carefully noted and preserved.*

A record of pupils' interests and characteristics.

While the physical condition of the pupils should be definitely noted, a knowledge of their mental characteristics is scarcely less important. Such facts as each pupil's deepest interest and chief characteristic and the extent of his mental power in various directions occasionally recorded by the teacher will be a valuable aid not only to the teachers making the observations but also to the subsequent teachers. The Life Book made in the schools of France and the record of certain facts pertaining to each pupil which is kept in some of the schools of this country indicate a kind of child study which may well challenge the attention of progressive teachers.†

Separation of all abnormally defective children.

Special schools and classes.—*Schools for defectives.*—It ought to be assumed that no child shall be allowed to attend the regular public school whose presence in the school has a deterrent or demoralizing effect upon the other pu-

* Notes respecting school hygiene, the methods and means of ascertaining the physical condition of pupils are given in Appendix F.

† Some of the records used for these observations are given in Chapters IX and XII.

pils. For the sake of all concerned, abnormally defective children, such as the blind, deaf-mute, and feeble-minded, should be educated in special schools supported either by the state or by the municipality in which such children live.

For blind and deaf children and for the milder cases of feeble-minded children, special local schools may be established in places where the number of such children warrant it, the children living at home. Attendance upon these institutions should be obligatory on the part of all defectives not otherwise provided for. The home school for defectives should be so organized that no teacher will have more than twelve or fifteen pupils to care for at any time, a large part of the work being with individual children. A fuller treatment of this subject will be found in chapter XI.

Special local schools.

Provision for individual instruction.—For simply backward pupils or for those who need extra individual assistance to enable them to work profitably with a given class, special schools or classes may be formed. In a school building or district consisting of three hundred pupils there are likely to be fifteen or twenty of such pupils as need the special attention of a superior teacher. No attempt at grading these pupils should be made unless there are enough for two or more schools in a building or neighborhood, in which case the division might be made on lines of proficiency in reading and arithmetic or in reading and writing.

Plans to meet the needs of backward children and to give more attention to individual pupils.

One means of giving special assistance to in-

dividual pupils is the employment of an extra teacher who hears no recitations but passes from seat to seat to give pupils such assistance as they need.*

Vacation schools.—The demoralizing influence of idleness or want of regular occupation is nowhere more apparent than among children in cities and villages during the long summer vacation, and the demoralization is scarcely less apparent in some of the seaside and mountain resorts. To remedy the harm in some degree, a few cities and large towns have maintained vacation schools with most excellent results.

The programme of vacation schools.

The programme of these schools is usually quite different from that of the ordinary school, being given largely to nature study, reading, industrial exercises of various kinds, and physical exercises, including interesting plays and games. It is also found useful in some vacation schools to offer opportunity for a limited amount of study in some such sequential branches as reading, arithmetic, and grammar, by means of which pupils may work into a higher grade in the fall term of school. These schools may also afford opportunity for good field work in geography as well as in geology and botany.

So popular have summer schools become that it has been found difficult in some places to meet the demand for them. The hope is that they will become universal, and be as vital a part of

* This is known as the Batavia plan, having been introduced in the schools of Batavia, N. Y., by Superintendent John Kennedy.

the public school system as the more strenuous sessions of other portions of the year.

It is a fair question whether these schools should not be placed upon the same basis of compulsory attendance as other schools. No doubt the promise of such work as the above programmes offer will be sufficient inducement for a large majority of the children to attend school during several weeks of the summer. For the protection of the community and of a few idle and disorderly children, the summer session of the schools might very properly be regarded as a part of the compulsory school year, but in this case the school officials should be given full authority to excuse from attendance at the summer session all children who are provided with regular employment, or who are looked after with a reasonable degree of care by parents or guardians.

Attendance upon summer session might be compulsory.

Evening schools. — The notable response of the people in some of the large cities of the country to the proffered evening use of school buildings for educational purposes suggests the advisability of a universal adoption of the plan. In New York and Boston thousands of persons beyond school age during certain seasons throng nightly the school-rooms for the purpose of receiving instruction in various lines of study and practice. There is no reason to suppose that the response would be less marked in many smaller places if the same or similar advantages were offered.

There is probably no other outlay from which

Outlay for evening schools justifiable.

there are so many immediate and direct results as that which is made for well administered evening schools. Of course the money for their maintenance must not be diverted from revenues needed for the support of the ordinary day schools. The relative cost of the evening instruction in many subjects may be made considerably less per pupil than that of the day schools, while some of the expense for evening instruction may very properly be borne by those who receive its benefits.

There are four kinds of evening schools to which attention may be given.

Evening schools for ordinary branches.

(1) evening schools for instruction in the ordinary branches to persons beyond the school age. These schools have been in existence for a long time in many of the larger places, and have been found very useful when properly conducted. Much of the work done in these schools is necessarily individual, although in large cities a classification somewhat similar to that of the day schools may be made.

Evening drawing schools.

(2) evening schools for instruction in drawing. These schools are best patronized in manufacturing places by apprentices and artisans who need assistance in direct connection with their work

Evening high schools.

(3) evening high schools. These are established only in large cities where there are many graduates of the grammar schools who have not found it possible to continue their studies in the day high school. There are also others not graduates of the grammar school who can profit by the instruction in high school subjects.

(4) evening industrial schools in which various kinds of industries are taught. It is to these schools that the term "educational centre" has been applied and in which the unusual interest above alluded to has been manifested.*

Educational centres.

The qualification and appointment of teachers.—There is little need of urging the desirability of securing for the schools teachers of the highest possible qualifications. Every one is ready to assent to Emerson's oft quoted estimate of the importance of the teacher as compared with other conditions of education; but not all are agreed as to what requirements for teachers should be actually made. Few of our American states are yet ready to adopt the standards set by the requirements of Germany and France while there doubtless are many people who fail to see that such requirements are either necessary or advisable.

All are agreed in theory at least that the first and necessary qualifications for a teacher is a good moral character, coupled with a refined and cultivated personality.

A good moral character essential.

All too would insist upon a fair degree of scholarship as a necessary part of the teacher's equipment. In actual practice however, as shown by examination requirements, there are varied notions as to the extent of knowledge needed for a teacher, from the idea that a teacher needs to know only what he expects to teach to the idea that he should have a thorough knowledge

Scholarship needed.

*Some account of the work carried on in educational centres is given in Appendix E.

of subjects far in advance of the immediate needs of his pupils. Well established systems of education abroad demand the last named standard of acquirements for the teachers, and the trend of sentiment and practice in America is in this direction.

Professional
knowledge
and skill.

The acquiring of knowledge presupposes a knowing mind, and the power of imparting knowledge is enhanced by a knowledge of how it is best acquired. The teacher therefore must add to his knowledge of subjects a knowledge of mind and its processes. This knowledge of psychology to be effective must be not merely general and theoretical; it must be particular and practical, a kind of knowledge which will furnish a basis for a good philosophy of method which all teachers should possess.

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Use of
psychology

Whether we agree with the report of the Committee of Fifteen, which assumes that the principles of education "are rational inferences from psychological laws",* or with Professor James in the thought that it is not possible for definite programmes and methods of instruction to be deduced from psychology,† few will now deny that the teacher will be a better teacher for knowing something of the "science of the mind's laws". Even Professor James admits this when he says that although the methods of teaching are not derived from psychology they

*Report of the Committee of Fifteen, published by the American Book Company, 1885, p. 25.

†Talks on Psychology and Life's Ideals, p. 7.

must agree with it, and that "psychology ought certainly to give the teacher radical helps."*

In recognizing the worth to a teacher of a knowledge of psychology, we need not in any way disparage that individual "inventiveness and sympathetic concrete observation" which Professor James makes so much of. Add to this equipment of a teacher those other features of professional training mentioned in the Report of the Committee of Fifteen, and we have a standard of qualifications which is everywhere recognized as complete.

Recognizing this threefold standard of qualifications for teachers, viz.: a high personality, good scholarship, and efficient professional ability, the superintendent asks with much concern how persons possessing such qualifications may be secured. Upon the assumption that the people are interested in the schools to the extent of giving freely to their support and of electing only able and disinterested persons on the school board, the problem ought not to be a difficult one to solve. The minimum qualifications of teachers needed should be clearly set forth, and the superintendent by personal examination or by inspection of their work should make his nominations, from which alone teachers should be selected by the board. Sometimes a single nomination may be made for a given vacancy, the board either confirming or rejecting the nomination.

Method of
securing good
teachers.

The least which should be demanded of candi-

*Ibid, p. 9.

Minimum
qualifications
of teachers
defined.

dates for positions in primary and grammar schools is the equivalent of a two years' normal school training, and for positions in high schools the equivalent of a four years' course in college or normal school. At present the standard of qualifications for teachers here mentioned is fully met in many cities and large towns, and the results fully justify the extraordinary efforts that have been made by the people and school officials of these places.

The most
difficult prob-
lem in country
districts.

The most difficult problem is to be met in country districts, where the means of carrying on the schools is generally quite limited and where the expectations and demands are frequently of a low order. Mention has been made of the duty of the state to provide liberally for the support of schools and to encourage a liberal policy of local taxation.* Mention also has been made of the necessity of designating in some way a minimum of qualifications for all the teachers of a state.† If all this is done and if the system of supervision is at all adequate, it ought not to be a difficult matter to bring the schools of country districts up to the standard of the schools now maintained in the larger towns.

Examinations.

The state may materially assist the authorities of both larger and smaller municipalities by inaugurating a system of examinations such as is maintained in Germany and in one or two of our American states; and by requiring that this standard of qualifications shall be maintained by all the cities and towns.

*Pp. 17-20. †P. 15.

Of course the best test of a teacher's ability is actual work in the schoolroom. Instead of a formal examination upon the professional side, whenever it is convenient candidates for positions may be asked to take a class or school for half a day or to serve as substitutes for a time. Superintendents also will find it helpful to visit the schools in which candidates are teaching for the purpose of ascertaining their ability as teachers. There are few duties of the superintendent more important than that of making a wise selection of teachers, and he can well afford to go long distances to be sure that no errors of judgment are made.

Actual work in the schoolroom the best test.

As a practical measure of precaution it is well in the selection of teachers, especially in the case of untried teachers, to place them on probation for a limited time, and when they have proved their competence to elect them for an unlimited time subject to removal only for cause.

Temporary appointments.

Text-books and supplies.—If the rule is followed as suggested (see page 43) that “no books shall be selected by the board in opposition to his [the superintendent's] recommendation” the responsibility of having good text-books in the schools rests upon the superintendent.

While a superintendent may be able by a careful inspection to see the good features of a text-book, he will always welcome the advice of his best teachers. If therefore a change in text-books seems desirable it will be found helpful to give to one and another a text-book under contemplation and to ask their opinion of its merits.

Method of selecting text-books.

There need be no haste in making the decision, and plenty of time should be given for a comparison of views. It may even be well to put a set of books into the hands of a class of pupils for trial under one of the teachers, and watch the result. It may be found that a text-book whose selection and arrangement of topics are to all appearance good is not under ordinary conditions found satisfactory in actual practice.

Few changes
of text-books
should be
made.

It should be borne in mind by school boards and superintendents that frequent changes of text-books are to be avoided. The teachers should be made to realize that the value of their work depends more upon them than upon the text-book. This precaution is especially needed in places where the parents have to purchase the books. The expense of text-books in a large family is sufficiently burdensome when there are no changes of books, and when they may be passed on from the older to the younger children. If changes must be made it seems but right that some method of exchange be resorted to, and that the extra expense if any be borne by the city or town.

As to the question of free text-books something may be said upon both sides. The objections most commonly heard are:

Objections to
free text-book
system.

- (1) the books are likely to be used too long
- (2) the books are carriers of disease
- (3) the plan of free text-books prevents the gathering of educative books in the home.

Among the advantages claimed for the plan are the following:

(1) a necessary condition of a free and compulsory system of schools

Advantages of
free text-
books.

(2) an increase of attendance upon the schools

(3) economy of time and money

(4) training of the children in the exercise of care of things not their own

(5) the removal of a serious burden of expense from parents

(6) convenience in having books on hand when needed.

It must be confessed that the arguments in favor of the free text-book system are more weighty than those upon the other side. Some of the objections raised may be met by letting the pupils as far as possible have the same books from term to term and even from year to year, by frequently disinfecting the books, by letting the pupils have full possession of the books after using them for a certain time, and by permitting parents to buy individual text-books for their children when they desire to do so.

Ways of avoid-
ing objections.

Some of the advantages claimed for the furnishing of free text-books may also be claimed for free supplies, such as paper, pens, pencils, etc.

Free supplies.

The cost of supplying text-books and supplies to all the pupils will of course be greater during the first year than it will be afterwards. It will vary in the different grades; the average annual expense for all the schools, high schools as well as elementary ought not to be less than \$1.25 per pupil, and will not be likely to be more than \$1.75.*

Probable cost
of free text
books and
supplies.

*The average annual amount paid for text-books and supplies in Massachusetts for the ten years ending 1902 was \$1.62 for each pupil.

CHAPTER VII

THE SUPERINTENDENT AS SUPERVISOR

Reference has been made to the double duty of a superintendent of schools—that of organization and that of supervision. Important as the duties of organization may be, the duties of oversight and wise direction of school work are far more so.

Relative importance of supervision.

That these more important duties are most frequently neglected is a matter of common observation. One possible reason of the neglect of this part of the superintendent's duties is the fact that they are more professional in character than his other duties, and demand a greater degree of skill in their successful accomplishment. It is comparatively easy for a superintendent to allow his time to be wholly absorbed in matters relating to the course of studies, attendance of pupils, classification, and the like, not to speak of the duty of attending to details of repairs, supplies, and business accounts, which some superintendents seem willing to assume and which some school boards are only too willing to put upon them.

The superintendent's duties as inspector.

School inspection.—The duties of a superintendent of schools as supervisor are those of inspecting, examining, advising, and directing. As inspector, the superintendent should ascertain, through observation and inquiry

(1) the condition of the buildings and premises, and the character of the ventilation, heating, and lighting of the schoolrooms

(2) the attendance of pupils

(3) the condition of the school, including the teacher's personality and method of teaching, the school equipment, and the work done by the pupils.

Enough is said elsewhere respecting the construction and care of school buildings and grounds* to show the part which the superintendent may assume in the inspection of what may be called the "externals" of the schools. Without permitting this part of his duties to absorb much of his time, he will find it necessary to have enough direct knowledge of the condition and needs of the buildings and their equipment and surroundings to co-operate with all concerned in the securing and maintaining of convenient and healthful accommodations for the schools.

Inspection of school buildings and grounds.

In matters of school attendance the superintendent will work mainly through teachers and attendance officers. Needed information of this kind will be gained by means of records and reports. He will however need to take frequent note of cases of non-attendance and their causes so as to advise intelligently as to a proper course to pursue, both in general and in particular cases.†

Cases of non-attendance of pupils to be noted.

* See pp. 61-64; also Chapter IX and Appendix F.

† For the duties of truant officers and the treatment of truants see pp. 47-49 and Appendix E.

A well defined purpose necessary.

It is perhaps needless to say that the element of a well-defined purpose is as important in the inspection of schools as it is in teaching. The superintendent who in his visits wanders from school to school with no definite purpose really accomplishes little. He may by chatting pleasantly with the teachers and pupils have a happy time and perhaps make himself a welcome visitor, but these ends can be quite as well attained in a wise effort to make the work of the school more effective. This is done by inquiry and observation along definite lines, with such suggestions, directions, and advice as will lead both teachers and pupils to work together with a common purpose.

A spirit of cheer and helpfulness needed.

In a given week or month the superintendent may wish to give special attention to a branch of study that is to be treated at the monthly teachers' meeting. At times he may desire especially to follow up certain suggestions he has made either to the teachers together or to a few teachers separately. Again, certain points of observation of use to the school board at its regular meeting may claim his attention. In all his visits he should not forget that the conditions of the school require him to bring to it always a spirit of cheer and inspiring enthusiasm. Whenever he find himself in a despondent state of mind or in a condition of physical discomfort, or in any way unfitted to appreciate the good efforts and intentions of the teachers, he should, if he works at all, perform other duties than those of inspection. We may go

still further and say that if the superintendent's habitual attitude toward this part of his work is not that of courage, helpfulness, and unbounded sympathy, he would better turn to some other field of labor.

The superintendent's chief duty as inspector will be of course in relation to the actual work of the school. The following questions should find frequent and definite answers in his mind in respect to every school which he visits. Are the pupils constantly and profitably occupied in their study or "busy work"? Are the tasks assigned such as keep every pupil at work when not reciting? Is the teaching such as to lead the pupils to acquire clear ideas of the subject or topic presented? Is the questioning of a kind to lead the pupils to think for themselves and to express themselves in an original way? Is opportunity afforded in the recitation for the pupils to express fully what they have to say of the subject in hand? Is self-reliance encouraged in the study as well as in the recitation of pupils? Is the written language carefully done, and is it such as to encourage habits of clearness, correctness, force, and originality of expression? Are habits of self-control being formed in the life of the school from motives of a regard for the rights and feelings of others? These and other well-defined questions should be constantly asked and answered by the superintendent as he inspects the work of the schools.

Questions to be constantly asked and answered.

As the information thus gained will be not for his own benefit alone, but for the use of the

How notes of inspection should be taken.

teachers and school board, it may be necessary for him to take notes of what he sees. Some objection has been made to the taking of notes in the schoolroom by the superintendent. It is true that teachers may be embarrassed by such note-taking if it is done openly and frequently, and if they do not understand the use to which the notes are to be put. If, however, the notes are taken quietly at the close of a visit or during three or five minutes of his visit, some of the objection will be removed. If in addition to this precaution the superintendent makes it known that the notes are to be used mainly for the teacher's benefit, either directly in a private conference or in a teachers' meeting, there is likely to be little objection to the practice by the teacher. A good method will be for the superintendent at first carefully to observe the work of the school without taking notes. After a time he may go to the teacher's desk, and, after examining the register of attendance and the written work of pupils, write in his notebook such observations as he wishes to preserve for reference. This may be done quietly, and without attracting attention.

A notebook in the teacher's desk.

Some superintendents find it useful to have a notebook in a given place at the teacher's desk, and to make such notes in it as the teacher needs to know, such as his opinion of the good and poor points of a given recitation, or what better method of teaching or examining might be used. The teacher uses the same book for any questions or remarks she may wish to note. It can be

readily seen that a judicious use of such a notebook may be of great value to both teachers and superintendents.

A word of warning is needed for some superintendents who are inclined to be too analytical in their inspection of the personality and work of teachers. While the inquiry should be upon definite lines, it need not necessarily be upon many lines or upon very minute ones. If the results of an over-refined inquiry become known to the teacher whose work is inspected, there is likely to result a sensitiveness and attention to particulars which will seriously interfere with her work.

The inquiry
not to be too
minute.

Two outlines issued by reputable superintendents will illustrate the possible dangers of this kind of inquiry. The first outline is an "unclassified list of one hundred suggestive questions for self-examining teachers". Some of the questions are undoubtedly good ones, and may at one time or another be asked by conscientious teachers; but it is doubtful if so many as one hundred or even ten questions, however good they may be, should be put before teachers for constant reference. Teachers above all persons need to be as free as possible from the mechanism of their work, and much introspection is of doubtful value.

Examples of a
too close
analysis.

The other outline referred to is for the guidance of superintendents, and consists of one hundred and seventy questions to be answered by them in their inspection of the work of teachers. Here again there is danger of over-analysis

- in estimating the worth of a teacher. Some of the questions must necessarily be trivial and comparatively unimportant, and some of them, it must be granted, are too severe a test even for the best teachers. The standard of qualifications for teachers should be high but it should stop far short of perfection.

Danger of over-estimating unimportant features.

In rating the work of teachers there is danger of over-estimating those features which are not satisfactory or of making comparatively unimportant features overshadow the important ones. If for example the sole test of a teacher's worth is his manner in the class or the order he secures in his school, unmindful of the way it is secured, an injustice is likely to be done to that teacher; or if he is judged only by the intellectual attainments of his pupils or by their attainments in only one or two directions the same error may be made.

Three parties concerned in the superintendent's inspection.

The effectiveness of the superintendent's inspection will be determined both by the character of his observations and by the use he makes of them. The three parties most intimately concerned in such observations are the school board, the teachers, and the superintendent. What the school board most needs to know for its guidance is whether the work of a given teacher is efficient; and that, after all, is what the teacher himself most needs to know, but with this difference, that the teacher needs to be told such details of judgment as will best assist him both by supporting him in good ways and by helping him to improve in ways that are not good.

Great care should be taken in making personal criticisms or suggestions to teachers, lest there be misunderstanding and friction between them and the superintendent. The three elements which should characterize criticism of any kind are tact, fairness, and kindness. In recognizing the good points of a teacher's work, and in always suggesting another and better way than the way criticised, the superintendent gains the teacher's respect and confidence. In most of this constructive criticism the teachers should not be made to feel that they are directed to teach in a particular way. The better way should be intelligently and freely followed, or not at all. Of course, if the neglect or the poor method employed is of a serious nature, and is persisted in, there is little that the superintendent can do but to report to the school board the nature of the neglect or error, always avoiding the appearance of anything like an exercise of arbitrary authority.

Care in personal criticism.

It is needless perhaps to say that the visits of the superintendent should disturb the school as little as possible. It is doubtful if anything beyond a pleasant, quiet greeting to the teacher upon his entrance into the room is desirable. Even the kindly "Good morning, children", by the superintendent, and the children's response in concert, may become perfunctory and meaningless.

Few interruptions of the regular work.

Few interruptions of the recitation by questions or remarks from the superintendent should be made, especially if the questions or remarks

are purposeless or without meaning to the teacher. Individual work with the pupils at their seats is also no part of the superintendent's function unless for any reason he needs to know the ability of certain pupils along special lines.

Record of inspection.—While it is true that in most instances a general opinion of a teacher's efficiency is all that a school board will care to hear from the superintendent in determining their action as to his retention as a teacher and while it is also true that a too close analysis of a teacher's work is not wise, it will be found desirable for the superintendent occasionally to make a careful estimate of each teacher's work in particular lines. The following outline may suggest points of inquiry in observing a class recitation. Besides furnishing to the superintendent valuable data for reference the observations and conclusions will be a direct test and challenge of his professional ability.

Record of
each teachers'
work in par-
ticular lines.

1. Name of teacher, grade and subject. Number in class. Time given, etc.
2. What is the general aim or purpose of the lesson? (a) Instruction, (b) examination, (c) drill.
3. Does the teacher seem to have clearly in mind a specific end? If so what?
4. If (a) [see 2] is too much or too little presented?
5. Is the arrangement of material good?
6. Is there a connection with previous lessons? If so what?
7. Is there correlation with other subjects? What and how?

8. Are the questions such as to encourage originality and self activity ?

9. Are the important points emphasized ?

10. Is the recitation of pupils such as to encourage comprehensiveness, conciseness, clearness, and correctness of expression ?

11. Is the manner of the teacher animated and interested ?

12. Are the pupils attentive and interested in the lesson ?

For more frequent and general note-taking of results of observation some such blank as the following may be used, intended only for personal use of the superintendent. The marks are made on a scale of five, 1 being "very poor" and 5 "excellent".

General record
for reference.

<i>Names of teachers</i>	<i>Industry of pupils in study</i>			<i>Attention of pupils in class</i>			<i>Method of discipline</i>			<i>Skill in teaching</i>			<i>Manner of teacher</i>			<i>General impression</i>		
Mary Brown..	4	3		3	4		2			3			4			3		
Sarah White..	5			4			5			4			4			5		
Emma Smith.	2	1		1	3		2			1			2			2		

In marking, the supervisor of course may use any symbols he desires—letters, figures, or arrangements of dots. There is an obvious advantage in having a record whose key is known only to the maker of it.

If the purpose of the record is to furnish data for the giving of individual advice to teachers, special notes of work observed will doubtless be better than either of the forms above noted. Such notes also may be more satisfactory for reference in case the supervisor's rating as presented to the school board is challenged by ag-

Special notes
of work
observed.

grieved parties. The following form of rating teachers by supervisors has been suggested as reasonable, comprehensive, and simple. Features marked: (1) Personality, including character, appearance, manner, voice, etc.; (2) instruction; (3) discipline: each feature to be marked a, b, c, or d; a, meaning very good; b, good; c, fair; and d unsatisfactory.

Examinations.—Although the superintendent's visits are primarily for the benefit of the teacher there are times when the direct work of the superintendent with the pupils will be most desirable. Sometimes the most effective way of suggesting to the teacher desirable work to be done or of ascertaining whether desirable work has been done is by way of short oral or written examinations given at the time of the regular visits.

Short oral or
written exam-
inations.

Thus, for example, the superintendent may desire to impress upon the teacher the importance of giving to the pupils much oral practical work in arithmetic. He might advise or even direct this to be done, with little effect. But a brief examination will open the teacher's eyes to the importance of such work, especially if the results are poor, and the examinations along the same line are repeated in succeeding visits. These examinations, if oral, may also illustrate to the teacher a method of questioning by which the maximum of thought and clear expression on the part of pupils may be gained.

Occasionally of course the questions will be quite impromptu, being suggested by what the

teacher or pupils have done in recitation; but generally they should be carefully made out with direct reference to the possible use which the results will serve and they should always have a point. Aimless questioning is worse than none.

Designation of questions in note-book.

For convenience of noting and of reference, the groups of questions may be designated by letters of the alphabet. The following questions will suggest the form and kind of examinations which may be made in the various grades. The Roman numerals in parenthesis indicate the grades of pupils for whom the examinations are intended. For example (III-V) means that the questions are intended for pupils of the third, fourth, and fifth grades or years in school. In ungraded schools the divisions may be indicated by the letters L, M and U, which stand for the *lower*, *middle* and *upper* divisions.

ORAL ARITHMETIC A (III-V)

1. Cost of half a dozen bananas at the rate of three for five cents?
2. Cost of thirty eggs at twenty cents a dozen?
3. How many times will a pail containing 1 gal. 3 qt. of water fill a quart measure?
4. Cost of 2 gal, 1 pt. of milk at 8 cts. a quart.?
5. If 4 lb. of cheese cost 50 cts., what must be paid for 20 lb.?

ORAL ARITHMETIC B (VI-VIII)

1. At the rate of 2 for 5 cts., how many oranges can I buy for \$4?
2. Cost of 1 gross of buttons at $\frac{3}{4}$ cts. apiece?
3. Cost of 3 lb. 4 oz. of cheese at 12 cts. a pound?

4. A man earns $\$1\frac{1}{2}$ a day. How much does he earn in a week?

5. At $\frac{3}{4}$ of a dollar a peck, what must I pay for 2 bushels of apples?

GEOGRAPHY A (VII–VIII)

1. Give reasons for extensive manufacturing in Great Britain.

2. Compare the area of France and that of some parts of our country.

3. Compare the degrees of rainfall in the countries of Spain and Holland and explain the cause of the difference.

4. What are the industries of Norway? Why do they not include other kinds?

GEOGRAPHY B (III–IV)

1. Water from the eaves of our schoolhouse flows towards — (name the brook or river).

2. The slope — (east, west north or south) of our schoolhouse slopes to the — (east, west, north or south).

3. A divide crosses the road — (east, west, north or south) of our schoolhouse.

4. The right bank of — (brook or river nearest to the schoolhouse) is the bank (next to, farthest from) the schoolhouse.

In taking notes of results of any of the above examinations, the superintendent may write in his notebook the school or class examined, the time of the examination, the set of questions given, and the per cent. of correct answers. For example: the note "Miss Brown, V Oct. 2. Arith. A. 65" means that the pupils of Miss Brown's fifth grade were examined on the second day of

Notes of results
in note-book

October in Arithmetic, using a set of questions marked A, and that there were 65 % of correct answers. For purposes of ready comparison the results of the examinations might be given in tabular form thus:

<i>School or teacher</i>	<i>Time of examination</i>	<i>Class examined</i>	<i>Subject</i>	<i>Set of questions</i>	<i>Per cent of correct answers</i>	<i>Remarks</i>
Mary Brown.	Oct. 2	V	Arith.	A	65	{ Great extremes-8 perfect papers.
Sarah White.	Nov. 3	IV	Geog.	B	70	

A convenient method of tabulating the results of a given examination is to write a set of questions on a page of the superintendent's notebook and on the opposite page the name of the school or class, number examined, and number of correct answers. Thus, opposite a page of three or five questions in geography the results might be given as follows:

<i>School</i>	<i>Time of examination</i>	<i>Class examined</i>	<i>Average per cent of correct answers</i>	<i>Remarks</i>
Washington...	Nov. 9	VI	55	Most failures in 2d question. 6 pupils.
Adams.....	Nov. 10	M	65	

Much depends upon the way in which the examinations are given. Two points of prime importance should be kept in mind by the superintendent, or for that matter by any one who examines. The conditions, in the first place, should be such as will insure the greatest degree of freedom on the part of the pupils. The fear of failure should as far as possible be removed

Conditions underlying the examinations.

from their minds. They should be encouraged to give all they know of a subject, and especially all that is the result of their own thinking.

In the second place the examinations should be so conducted that the pupils will be entirely free from the temptation to receive any outside help. This should be done not merely because a true record of each pupil's attainments is desired, but chiefly because it gives no opportunity or temptation to deceive. By degrees the habit of honest speaking and writing will be so fixed that there will be no thought of deception when later there may be an opportunity to practise it. The absence of a spirit of honor in examinations so common in some schools is a sad commentary upon the neglected opportunities of moral training. No amount of advice in respect to honor is at all comparable in effect to the daily and hourly guidance in the practice of it.

Time allowed
for answers.

As a rule ample time should be given the pupils, both in writing and in speaking their answers. Sometimes, however, rapid responses may be called for, especially in those matters which should be quickly called to mind, as in some foundation facts of arithmetic. In some examinations the pupils may be given time to think their answer and be allowed but a brief time for writing it. Thus in a test of oral or mental arithmetic the pupils may be given a question at a time with a signal for writing it.

The following orders will illustrate this point:

(1) "Ready"—with pencil and paper (or slate)

(2) "Price of $10\frac{1}{2}$ lb. of beef at 16 cts. a pound?"

A method of
examining
suggested.

(Pupils keep answer in the mind till next order is given)

(3) "Write answer" (pupils quickly write figures only of answer in the upper right-hand corner)

(4) "Pencils down"

(5) "Those who have 168 hold up the paper" (or slate).

The answers may be quickly inspected and if needed note may be taken of the result. Quickness, accuracy, and freedom from collusion characterize such an exercise, serving the double purpose of ascertaining what the class has done and of indicating to the teacher work which either has been well done or ought to be done more thoroughly.

Considerable space has been given here to the methods of brief occasional examinations in the hope of showing their superiority over the longer and more formal examinations sometimes given by principals and superintendents. The latter kind of examinations may be occasionally given, but if they are frequently given and especially if they are given as a full or partial test of the ability of the pupils to go into a higher class, they are open to grave objections. The inevitable result of such examinations is to force the teacher into the employment of means and methods which are now deprecated by the best teachers.

Formal written
examinations
by superin-
tendent should
be few.

In the first place, while a general examination

furnishes a basis for comparison it is unjust in not being given with reference to the needs of any particular school or teacher. It may be needed in some schools while it is for other schools unnecessary and even harmful.

Objections to
examinations
for promotion.

But the greatest objection to the formal examination for promotion given by a superintendent or principal lies in its cramping effect upon teachers and pupils. The questions so given are a test of information only and of such information as may be found in the text-book. Not many outside or general questions are included in the tests because it is seen to be manifestly unfair to ask such questions with consequences so momentous as are involved in the promotion of pupils. Superintendents who would not scruple to blame teachers indirectly by giving questions whose answers cannot be found in the text-book would hesitate to punish the children in that way. The result is that in schools where the promotions depend in full or in part upon tests given by an outside examiner the work comes to be largely that of the verbal memory, a kind of loading-up-process of information in anticipation of the unloading process of an examination.

It is this loading and unloading process which has prompted some one to define the examination as a "permission to forget", a definition which is recognized in the preparation for college, where the requirements for admission demand an examination upon certain books. The limited capacity of the pupils in respect to the

information load is recognized by the college, and the difficulty is met by the ingenious plan of preliminaries in which the overburdened candidates are permitted to forget on the installment plan.

But these strictures upon examinations can in no way apply to examinations given by the teachers themselves, or to the examinations by superintendents or principals when the main purpose is to test the power of the pupils and to give a hint to teachers of the kind of work which it is desirable to do. Good teachers everywhere recognize the helpfulness of such examinations and welcome them. Some examinations desirable.

Written examinations upon special lines of work may also be given to a certain school whenever it is found that wrong lines are followed or wrong subjects are emphasized. For example if the pupils of a sixth grade are acquiring too few facts in history or are acquiring unimportant facts, a set of questions carefully prepared by the superintendent should be given to the school, and the teacher be asked to mark the papers. If it seems desirable questions may be given to the same grade of pupils in other schools for the purpose of a comparison of results.

Teaching.—The superintendent, if sure of his ability as a teacher, might in addition to examining pupils give model lessons in teaching. He ought at least to be ready to illustrate a point of teaching or questioning which he may have made in the teachers' meeting or to teachers The superintendent to give model lessons.

individually, by taking a class of pupils. He may not be able to teach all subjects as well as some of his teachers, but he should be able to illustrate by example any principle he has given. This may be done in response to a teacher's request, or at his own instance. If for any reason however, he desires to conduct a recitation, it would be well to ask the permission of the teacher rather than assume it as a right and thus appear to the pupils to dictate. It is needless to say that all appearances of criticism of the teacher before his pupils should be avoided.

Teachers need
support as
well as advice.

The two classes of teachers who ought especially to feel the influence of the superintendent are the poorest teachers and the best ones. The former are to be made better, if possible, by judicious assistance, and the latter are to be supported by judicious praise. Those who stand between these two classes will undoubtedly be greatly assisted by both kinds of influences named. It may not be the superintendent's business to fit untrained persons for the profession of teaching, but it is undoubtedly his duty to correct as far as possible the poor methods of teaching which he finds, while it is equally his duty to encourage in all possible ways the wise efforts of good teachers.

The removal of inefficient teachers.—All this suggests a matter of great importance to the schools and of no little concern to the superintendent, viz., how to get rid of incompetent teachers. A teacher may fail from one of two causes, —either he is unable to improve on account of

existing conditions, or he is unable to improve under any conditions. In the former case, the conditions might be changed by transferring him to another school, or by giving him special assistance; in the latter case, the teacher should be dismissed, or be allowed to resign. In any case, it is assumed that the superintendent has pointed out to the teacher his faults, and has tried all the means in his power to correct them.

To insure wise and firm action on the part of the board in respect to the transfer or removal of incompetent teachers, it is advisable for the superintendent to explain to individual members what he has done, and perhaps to show them the difference between the work of poor teachers and that of good ones. By such means members of the board whose interests lie in the schools will not be influenced to retain incompetent teachers from personal, political, or sentimental motives. As a matter of fact, however, there are likely to be some teachers retained in service who are not approved by the superintendent. In such cases, the issue should be squarely made, wholly on the ground of the well-being of the schools. If there is no disposition on the part of the board to act in the interests of the schools, and there is a persistent effort to elect and retain teachers on other grounds than those of efficiency; and if, further, there is no sign of a disapproval of such action on the part of the people, then the superintendent is justified in moving to another field.

What to do
with incompetent
teachers.

There is one powerful agency in the retention

The influence
of division
committees
pernicious.

as well as in the election of poor teachers which may be spoken of here, although it has no direct relation to the duties of the superintendent—the agency of division committees of the school-board to whom is committed the duty of recommending the election or re-election of teachers. There could be no plan devised better calculated to encourage a spirit of log-rolling than this, for the recommendations of each committee are expressly made with the understanding that its action will not be questioned. Each committee practically says that it will interfere with no other committee so long as it is not interfered with. If such committees exist, their powers ought to be limited by the rules of the board according to which their action must receive the sanction of the superintendent.

Teachers' meetings.—One important if not essential means of raising the work of the teachers to greater efficiency is the teachers' meeting. There are several kinds of such meetings which may be held either directly or indirectly under the auspices of the superintendent, viz. :—

Local teachers'
associations.

1. *Meetings of local teachers' associations*, in which papers are read and discussed. These meetings should be directly in charge of the teachers, with such assistance as the superintendent may be able to give. It may seem advisable at these meetings to consider matters of general as well as professional interest, and to invite one or more specialists to present papers for discussion. The following programmes sent

to members of a local association indicate the possible character of the meetings:

- 1 Reading of records
- 2 Special business: reports of committees, etc.
- 3 Address by ——— of ———

Subject:—Practical ways of correlation

Discussion opened by Miss A. and Mr. B.

- 1 Opening exercises
 - 2 Miscellaneous business
 - 3 Educational progress of the nineteenth century.
-

- 4 The art of study

Sup't ———

- 5 Discussion

2. *Meetings for reading and study*, in which some particular topic or book is made the subject of discussion. The superintendent may or may not have the direction of these meetings, although his advice will be likely to be needed in making a choice of subjects. On some accounts it will be found best for the membership of these circles to be limited to a small number.

Small meetings
for study.

If a book is made the subject of discussion the portion assigned for discussion should be read beforehand by every member of the circle. Definite questions may be assigned for members to consider, or the assignment may be made by pages. If a special topic is to be considered, subdivisions of the topic may be assigned to different members to discuss. The announcement of the topic may include suggestions in the form

of questions. The following embodiment of this idea is copied from an actual programme:*

Subject for discussion: "Motives and instincts as bases of discipline."

SUGGESTIONS

Study the article on this subject in the June (1901) number of "Educational Foundations".

An actual
programm

The following questions are based on the article named:

What is meant by discipline?

What do you consider the chief motives which a teacher should use?

What value do you give to love of approbation and fear of censure as motives?

Should emulation be used as an incentive for the child's best work? Give reasons.

Discuss:

(1) "The value of rewards and punishments is in inverse ratio to their number"

(2) "Rewards and punishments should be given not for the possession or absence of faculties but for their use and non-use"

(3) "The justice of the awards must be unquestionable"

What value has suspension as a form of punishment and how should it be used?

How may the curiosity of children be made effective as a school incentive?

If the number of members is small and it is

*Prepared by Superintendent Asher J. Jacoby, Milton, Mass.

not desired to study or read in advance of the meeting, the reading may be consecutive, each topic being discussed after the reading.

3. *General teachers' meetings*, in which matters of common interest to all the teachers are presented. These should be directly in charge of the superintendent, and a large part of the time should be occupied by him. The most important and prominent subject for consideration at these meetings should be the suggestions of the superintendent, based upon his notes of inspection. These notes should be carefully arranged, with abundant illustrations. Following this in importance is the consideration of some vital subject connected with teaching, in which there should be a free and full discussion by the teachers, preceded by a short address either by the superintendent or by some other person invited for the purpose.

Meetings for teachers of all grades.

For the illustration of any principle or method of teaching, a class of pupils may be brought before the meeting taught either by the superintendent or by one of the teachers. In any case it should be regarded as a model lesson to illustrate a special point, and to furnish the subject for discussion in which all the teachers are expected to take part.

4. *Grade meetings*, in which only topics of special interest are considered, such as the limitations respecting the work of a given grade, or the most important subject to be taken up. The superintendent, of course, will take a prominent part in the discussion of these subjects, and see

Grade meetings

that each teacher clearly understands the conclusions reached.

Occasionally in grade meetings a model lesson may be given to illustrate some method of presenting a new subject or of reviewing a subject already studied, but care should be taken that the exercise has a point or points which will furnish the basis for suggestions by the superintendent or for a discussion by members of the section.

Attendance by
teachers vol-
untary.

With few exceptions, the attendance of teachers at teachers' meetings should be entirely voluntary. Of course the aim should be to make the meetings so attractive and profitable that no teacher will wish to miss a single one, but there need be few meetings which teachers should feel obliged to attend. If possible, the times of meetings should be so arranged that no one will feel overburdened if he attends them all. An average of one meeting a week should be the maximum. Two meetings a month will be likely to be as many as most teachers will be able to attend conveniently. Consideration especially should be had for those who are obliged to hire a carriage or to walk a long distance in order to be present.

Training of teachers.—Superintendents may heartily agree with what has been said as to the needed qualifications of teachers and still be confronted by a condition of affairs which forces upon them an undesirable alternative: that is to say, instead of electing only well qualified persons to positions as teachers the school board may persist

in employing untrained and inexperienced teachers. When such teachers are employed the question persistently presses itself upon the superintendent whether he will make the best of the situation by training as best he may the teachers in service or whether failing to induce the school board to elect teachers having the desired qualifications, he will endeavor to establish a training school in which local high school graduates may receive some preparation for teaching.

Shall local training schools be established?

There can be no question as to the inferiority of an ordinary city training school to a good state normal school as a means of preparing teachers for their work; neither can there be any doubt as to the inadequacy of the training which any local training school can give to young women just out of the high school. The alternative sometimes presented lies between such preparation as the local training school can give and no professional preparation whatever.

It will not be necessary for the superintendent to plead urgently for the establishment of a training school. The scheme will appeal at once to those members of the school board and community who see in it an easy means of securing without great expense places for their own townspeople. Besides it can be easily made to appear that the carrying on of a training school will be attended by an actual saving of expense. But before recommending such a course, the superintendent should exhaust every argument for the adoption of a standard of qualifications for

Not difficult to establish a training school.

The plan for a small training school.

teachers distinctly higher than that which is attained in a local training school as ordinarily conducted. If however it seems advisable to establish a training school nothing short of a good two years course with competent instructors should be considered. The following plan is suggested as effective and feasible for a small city.

Plant : A building or buildings having ten or more school rooms with recitation room facilities.

Teaching force : Five or six excellent supervising or critic teachers whose function it is to teach in the grades and to supervise the teaching of the pupil teachers, a special teacher of drawing and of industrial training, and one or two teachers of the history, theory and practice of education.

Course : Two years—First year—Study of the history and principles of education; observation and practice of teaching under supervision.

Purpose of training school course.

Second year—Study of theory continued, with increased amount of practice with and without direct supervision.

The course of study as above outlined aims (1) to inculcate by lectures and study of books the most important theories and principles of education; (2) to test those theories and principles by means of observation and practice; and (3) to familiarize the students by responsible practice with the art of teaching and management. Thus the laboratory and apprentice ideas of training

will be as fully developed as circumstances will permit.

A training school of a higher order—one which presupposes superior scholarship and professional ability on the part of the students may be established after the following plan:

A training school for graduates of normal schools and colleges.

Plant : School-rooms sufficient in number for each pupil teacher to have a room. .

Membership and duties : Only graduates of a normal school or college to be admitted, each member being expected to teach most of the time, with and without supervision.

Teaching force : A principal and one critic or supervising teacher for every four pupil teachers, the principal and supervising teachers to give instruction one hour a day in each class in the principles of teaching and to inspect and oversee the work of the pupil teachers. A comparatively small salary should be offered the pupil teachers for services rendered in teaching.

The superintendent's report.—Reference has been made to the desirability of the superintendent's making to the board a monthly statement of the condition of the schools and such recommendations as need to be made. This report should be carefully and judiciously made. It should contain such facts as members of the board need to have for an intelligent appreciation of what is being done in the schools and what ought to be done by the board. Minute details of administration or a long array of statistics will not be needed, neither will it be advisable to present many theories of administration or

The superintendent's monthly report to the school board.

teaching in the monthly report. The confidence of the school board will be won more by a statement of what is actually done than by a repetition of fine-spun theories. The following items are suggested as worthy of attention in the monthly report:

(1) Facts in relation to school buildings which are needed to carry out the superintendent's recommendations for permanent repairs or new buildings

(2) facts of school attendance, especially facts of such increase of numbers as will make necessary increased accommodations

(3) report upon the business committed to him by the board

(4) resignations of teachers and recommendations for supply of vacancies

(5) other recommendations for board's action

(6) plans of work in progress and in contemplation.

If the superintendent has the business affairs of the board to look after, it will be necessary to include in the report such items as approved bills and unexpended balances for the various departments.

Scarcely less important than the regular monthly report is the annual report, which, with the report of the school board, should be bound in pamphlet form and distributed to the citizens. This report although it is addressed directly to the school board should be made with reference to the needs not only of the members of the

The superintendent's annual report.

board but also of every parent and taxpayer. What the people most need to know is the exact work that has been done in and for the schools. Statistics should be limited to the items called for by state and national boards, and may be placed apart from the rest of the report in the appendix. The body of the report may contain a more or less elaborate treatment of the following topics:

(1) Comments upon the statistics contained in the tables, with such comparisons as may be needed to bring out clearly certain results or needs of the schools. For example if it is desired to call attention to the increased attendance in the higher grades, a comparison of present and past percentages of attendance in those grades might be made, together with a comparison of such attendance with the attendance in other places. Or if more money is needed for the salaries of teachers it may be shown that not so much is done in the city or town for which the report is made as is done in other places similarly situated.

(2) A record of school accommodations with reference to present and future needs. That part of the record should be especially emphasized which relates to sanitation and health. If the lighting and ventilation of any of the school rooms are poor, the fact should be pointed out, with such evidence of the needed changes as can be offered.

(3) Any new plans of administration which have been carried out; as for example methods of

promotions, individual instruction, or stamp savings.

(4) Account of plans referred to in previous reports.

(5) Resignations and appointments during the year.

(6) Discussion of general questions in which the parents are interested, e. g., home study, physical training.

(7) Desirable changes; e. g., medical inspection of the schools; establishment of one or more schools for backward children; introduction of the kindergarten.

(8) Educational agencies other than schools; e. g., the local educational association; the public library; art collections.

(9) Reports of special teachers: manual training, drawing, etc.

Occasionally there may be given in the report a detailed account of exactly what is done in the schools in special subjects as reading or arithmetic. Some superintendents take up in this way one subject each year and treat it exhaustively, making their report not only a matter of local interest but also a contribution to educational theory and practice.

Amount of time for supervision.—The relative time which a superintendent should give to the duties of supervision will of course depend upon circumstances. In a large system of schools many of the duties outlined above may well be performed by principals,

Relative
amount of
time for super-
vision.

under the immediate direction of the superintendent. In small places where most of the teachers are untrained a large part of the superintendent's time should be given to actual inspection of the schools and to such direction of the work of teachers as will give to it the largest measure of efficiency. But as already indicated, the teacher's efficiency is determined more by the self-direction of his own intelligence than by any dictation from others however intelligent it may be. A wise direction of the work of teachers therefore does not mean arbitrary dictation or the imposition of methods upon teachers that can not be made their own but it means the adoption of such means as will increase their professional knowledge and help them to apply it in skilful ways.

CHAPTER VIII

THE SUPERINTENDENT AND COMMUNITY INTERESTS

The uniting of the home and school in bonds of mutual helpfulness and the extension of the school so as directly to benefit all members of the community are ends which all agree to be most desirable. Among the ways of reaching these ends in which the superintendent may well take the initiative are using the school buildings for parents meetings and social gatherings, and establishing evening and Saturday classes for those who cannot attend the regular day school. These means of culture have already been referred to in treating of educational centres and vacation schools.*

Meeting of
teachers and
parents.

Parents' meetings.—There are various ways of bringing the parents and school authorities together for the purpose of talking over matters of mutual interest. One way, perhaps the simplest, is for the superintendent to invite the parents to a teachers' meeting in which subjects of general interest will be discussed, such as home study, school hygiene, or school discipline. After the superintendent has presented such points as he desires to make, opportunity should be given for a free interchange of opinions by persons present.

Parents' meeting in connection with visiting day.

Another good way of reaching the parents is

*See pp. 140-143.

to call a meeting of parents in connection with the school visiting day. It is the custom of some schools to have it known in the community that there is a day or half day every month upon which parents and all others interested in the school will be especially welcome. For such occasions special invitations are sent to parents through the pupils, it being understood that with little variation the regular work of the school will be seen. After the afternoon session of these days while the work of the school is fresh in mind, many of the visitors will be glad to hear from the superintendent and teachers some explanation of the exercises given and a statement of plans and purposes of the work of the school. Opportunity for questions should be given and for such comment as any of the visitors care to make. Some superintendents and teachers have found it pleasant for all concerned to spend a portion of the time afforded for these meetings socially, light refreshments being served.

Educational plans and news in the local newspaper.

Educational associations.—One of the best means of securing the coöperation and support of citizens in the work of the schools has been found to be the local educational association. The membership of the association consists of parents and teachers and all others interested in the schools. The organization and work of the various associations differ quite materially on account of a difference of conditions, but in all of them there are sought the arousing of public interest in the schools through addresses,

discussions, and conferences, and the bringing together of all the educational forces of the community. In some of the associations efficient committee service has been rendered in accomplishing such purposes as the establishment of kindergartens, and the decoration of schoolrooms. There is great opportunity in such associations to awaken a public sentiment, in needed reforms such as better ventilation and lighting of school rooms, a greater degree of attention to physical training, the introduction of industrial training, home reading, conditions of health, home study recreation for children, etc.

The local newspaper.—Among the agencies which may be employed in awakening an interest in the schools and in furthering progressive plans of administration is the local newspaper. Editors are generally willing to open their columns to educational matters of public concern, and for the good of the schools such matters should not be confined to complaints. In many instances complaints of the schools by parents and citizens arise from a misunderstanding of actual conditions or of what the purposes of the school authorities really are. Such complaints would therefore be prevented by a regular and systematic presentation of what is actually being done in and for the schools.

Illustration of
the use of a
newspaper in
the interests of
the schools.

It is evident that the information given should be under the direction of some one who has an interest in the schools, and who has a full knowledge of what they are doing. Naturally the

superintendent is the person best fitted to do this work. As the executive of the school committee he knows fully the plans of administration; and as supervisor, he is familiar with what is going on in the schools. He is able, therefore, as no one else is, to give a true and judicious account of what is being done for the good of the schools.

As an illustration of the possible usefulness of this service the following instance is given of what appeared in a newspaper which had a circulation in several county towns. The editor had assigned a column of each issue for the use of the schools, giving it the heading "School Department". It was in charge of the superintendent of schools of a union district comprising towns in which there were many subscribers. In one issue the following items were given:

Local educational associations.

(1) Plans of the superintendent for securing a regular attendance of pupils, and a statement as to which schools in the district had the best attendance during the month

(2) an account of the Thanksgiving exercises in two of the schools

(3) names of pupils in one town who were not absent during the term

(4) notice of the discontinuance of the schools of one town for two weeks

(5) details of plans concerning penny collections for a yearly subscription to a paper which gives a weekly statement of current events

(6) plans for collecting pictures for the schools.

In another issue of the same paper there was

printed a long letter from the superintendent to the teachers, a letter which was of special interest to parents.

Superintendents are sometimes able to make an arrangement with the editor by which the best compositions of various grades of schools are printed.

Such means of making known to the public what the schools are actually doing, and thereby helping to create a good public sentiment in their favor should be more widely adopted in the country towns and with some modification might be used with advantage in cities.

Superintendent's letter to parents.

Superintendent's letter to parents.—One means of reaching parents other than those already mentioned is the circular letter sent by the superintendent to the parents of every child attending school. Such a letter will be more likely to be read by parents than the annual report and its statements and suggestions respecting matters of mutual concern will have the force of a personal message.

An example of this method of reaching parents comes to mind. It was a letter sent at the beginning of a school year in which four matters were treated viz., physical health, home study and recreation, punctuality and regularity of attendance, and attention and diligence in school. The character of the letter may be seen by the following detached sentences quoted at random.

“As the home holds the school responsible for what is done there, so the school must look to the home to do its part in keeping the children

in such physical condition that they are able to put forth their best efforts."

"All school children even those in the high school, need plenty of sleep."

"There is no hope of meeting the exacting requirements of the higher institutions on the part of youth who are permitted to attend parties and entertainments that involve late hours, neither can they be dismissed from school to attend places of amusement."

"Whenever a pupil knows that the teacher is sustained by the confidence and coöperation of the parent, he is a better and more hopeful student."

Such a message coming in this direct personal way must have great weight with parents, and must help to create that spirit of coöperation which is essential to the highest success.*

*For a superintendent's letter in full touching vital matters of interest to parents see Appendix F.

CHAPTER IX

THE PRINCIPAL AS ORGANIZER AND SUPERVISOR

Duties of organization and supervision delegated to principals.

Some of the duties already outlined as belonging to the superintendent of schools will, under some circumstances, naturally fall to the principal. In large systems of schools the superintendent is likely to delegate to principals certain duties both of organization and of supervision which in smaller systems are performed by the superintendent alone. Thus the details of classification and promotion and of directing the work of teachers in some cities are likely to devolve upon the principal who has to teach but a portion of the time. Such a principal may be called a supervising or superintending principal. Sometimes the supervising principal may have charge of the schools of a district; in which case much of his time may have to be given to superintendence and little to regular teaching. It is a question however whether even in the largest districts, the supervising principal should not have some regular work as a teacher to do. This statement may well apply to city high schools as well as to elementary schools. The principal of highest price and presumably of greatest power as a teacher ought not to spend all his time upon the petty details of organization which might well be delegated to subordinate teachers.

Supervising principals should teach some.

In case the principal has direct charge of a room with no assistant, he will be expected to teach most of the time and have few supervisory duties beyond the government of all the pupils of a building at recesses and before and after school. Occasionally the duty is put upon such a principal of attending to cases of discipline occurring in the various school rooms—a duty which should be assumed not because he has superior physical strength or better judgment than others in the management of refractory pupils but because he has for the time being a position of greater authority than that of other teachers or because it is desirable to have some one near at hand to sustain the teacher in her decisions. But in any case the principal should be more than a policeman or judge. He should inaugurate and help to sustain all agencies that will tend to encourage a high professional spirit on the part of the teachers, a cordial coöperation of parents, and a fine sense of loyalty and high ideals among the pupils.

Principals with few supervisory duties.

The principal more than a policeman.

In directing the conduct of pupils outside of the school room, the principal should use the opportunities presented for cultivating in the pupils a respect for one another's rights, for giving them free and healthful exercise, and for leading them into habits of self control. It is hoped therefore that many disturbing restrictions, and especially a spying by monitors, will not be found necessary.

Principles of conduct.

Suitable plays and games for all classes of children should be provided for, to be carried on

Self control
the watch-
word.

under the direction either of chosen leaders or of the teachers. In these exercises and in going in and out of school, every pupil should be made to feel that he is to control himself to the extent of living up to his ideas of what is right. If he knows that it is not right to cheat or to abuse another in a game or to play in the files, he ought not to feel that it is necessary for him to be watched or to be reminded of any remissness in these respects. If he does not know this or if he is found to need watching or reminding, he ought to be denied the privilege of having his recess with others or of filing with them.

It is believed that if the exercises of the recess are properly provided for* and if appeals of the right kind are made, there will be very few pupils who will care to take their recesses by themselves or under special oversight of a teacher. They will be made to feel a sense of pride in controlling themselves, and will have a feeling of pleasure in freely entering into the games with others. The principal's power for good will be greatly enhanced if he enters into the spirit of the games and has a personal interest in every pupil. He should, if possible, know each pupil by name and make them all feel that he is their friend, ready at all times with a kind word or look. All this he certainly can do if he has frequent opportunities of visiting the rooms in which the pupils are at work and especially if time and opportunity permit him to give instruction or to examine classes in the various rooms.

* For list of games see Appendix F.

What has been said of the government of pupils on the play ground suggests a possible duty of the principal to inaugurate and encourage in all possible ways self government in the school room. Some principals have found it well in the middle and higher grades to establish a kind of pupil government in which the forms and practices of municipal governments are imitated. Others have interested the teachers in more direct and simple means of reaching the same end. In all plans of self government the principal, by showing a personal interest in the work and conduct of the pupils, may be of invaluable service to both teachers and pupils. His kind recognition of the ability or efforts of pupils to control themselves will be found a most effective aid to teachers. If, for example, a teacher has adopted the device of putting upon a "roll of honor" all pupils who are never spoken to for disorder or carelessness, the principal by occasionally referring to the roll may be of great assistance.

Self government to be encouraged.

Arrangement of programmes.—In schools having special teachers of music, drawing, or manual training or in schools having departmental work by the regular teachers, there is needed some one to adjust the programme in such a way as to maintain a proper balance and to avoid conflicts. This the principal is in better position to do than are the teachers collectively or even the superintendent. The time table will be determined by circumstances, including the character of the subject and the convenience and prefer-

Programmes for schools having departmental work.

ences of the teachers. The maximum amount of study demanded may also have to be adjusted in the interests of all concerned. It frequently happens that pupils are overworked or that an undue amount of time is given to a subject of study by reason of improper requirements. Some of the points of difficulty may be met by occasional conferences of teachers under the direction of the principal. By this means harmony of effort and purpose will be preserved and such a spirit of coöperation be maintained as is needed for the best interests of the pupils. In no better way can a proper correlation and balance of the various studies be effected.

Text-books to be tested by actual use.

The testing of text books.—It is frequently found advisable for text-books to be tested by actual use in the school room. This the superintendent and principal may do by placing the books in the hands of the pupils and afterwards asking the opinion of teachers as to their practical merits. The principal has the added advantage of seeing frequently the results of their use by various teachers and thus is able to give valuable testimony as to their adaptability to existing conditions. Many apparently excellent text-books would doubtless fall by the way if they were subjected to such a trial made under direction of a supervising principal.

Ways by which the co-operation of parents is secured.

Co-operation of Parents.—Probably the most unique and most powerful influence of the principal upon his schools lies in his ability to secure the interest and co-operation of the parents. This is accomplished (1) by interviews with parents in

the homes and in the school, (2) by visiting days for which parents are especially invited, (3) by special exhibitions of the pupils' work in each grade, (4) by parents' meetings at which the principal has an opportunity to explain what the teachers are attempting to do and to suggest ways by which parents may give needed aid, and (5) by local educational associations in which a healthy interest in the schools may be awakened through the frequent discussions of educational questions by teachers and citizens.

School Extension.—One effective means of awakening the people's interest in education is through direct instruction. Upon evenings and Saturdays for at least a portion of the year the school rooms and halls should be opened to all beyond school age for practical lessons and lectures of various kinds. Naturally the instruction desirable for persons in active life will be somewhat different from that which is given to children. This difference lies mainly in the kind of work attempted. Thus in some communities there will be classes in dress-making, cooking, carpentry, mechanical drawing, stenography, type-writing, etc., all with special reference to immediate needs. Popular lectures, with and without the stereopticon may also be given in this school extension course. Experience has shown that both class instruction and lectures will be fully attended if they are of the right kind. *

Evening
schools and
lectures.

* See appendix E for examples of active work in educational centres.

A simple plan
of school
savings.

School Savings Bank.—Among the educational interests not directly connected with the purposes of the school which the principal may have occasion to look after is the School Savings Bank. In one form or another this object-lesson and encouragement of thrift has been given in a large number of places both here and abroad. The plan of operation should be such as will require from teachers the least possible care and time. If there is a local bank an arrangement might be effected by which small deposits could be made for safe keeping through the teacher and principal. An account might be taken by teachers of all deposits until the amount for each pupil is sufficient for a bank book entry. Probably the simplest and most effective plan is that of the Stamp Savings. By this plan cards are provided upon which stamps are placed corresponding to the amount deposited.*

Child Study. The principal of a building or district is in a peculiarly favorable position to make a study of and provision for defective, backward, and refractory pupils.† He may

* This plan has been adopted in most of the large cities of the country, from which information as to how it is carried on may be obtained. Information and material may also be obtained from J. H. Thiry, Long Island City, N. Y., who introduced the system into this country.

† See what was said upon Special School and Classes and Schools for Backward Children pp. 138-140. Also Chapter XI, and Appendix E.

also do much to encourage and carry out on good lines profitable child study, in which a comparison of certain features of the pupils' personality and work is made and recorded. The purpose of these observations and records is two-fold, first in leading teachers to discover facts in relation to their pupils which they should know; and secondly in providing useful information for subsequent teachers. The records should be kept in permanent form, either in books provided for the purpose or in card catalogues. The facts sought and noted may be such as relate to the health, efforts and attainments of pupils at intervals of six months or a year. The outlines which follow will suggest both the kind and the form of records to be kept. Most of the items of the first outline may be supplied by the teachers, but in the interests of accuracy the principal may be called upon to assist in some of the measurements. *

Profitable child study.

The following blank is intended for a card catalogue, each card being 5 in by 3 in. The marks may be indicated by letters or figures, their interpretation being placed on the back of the card.

* Other Outlines for Observation Records are given in Chapter XII and Appendix F.

An illustration of a kind of child study most profitable to all concerned and quite easy to conduct is shown in the following plan devised and carried out in a large high school. *

Memorandum of Principal of Grammar School from which the pupil came.

Name of pupil. School attendance. General health. Temperament. Character. General Scholarship. What Course ought—to have chosen? Ought—to be allowed to take up extra work—first year? Greatest strength and interest. Greatest weakness. Outside interests. (What steady likes are shown?) Home conditions. (Outside influence in general). In case of difficulty in learning or fault in behavior what method of instruction or discipline have you found most helpful?

A plan of child study in which the co-operation of parents and teachers is secured.

Memorandum of Parent.

1. What has been — general health during the past two years?

2. Does — have any trouble with — eye sight?

3. Does — sleep well? How many hours? Does — take time enough to eat a good breakfast before going to school?

4. Roughly, how much time does — spend in recreation and exercise? In what way? Do you think — is out in the air enough?

5. Do you think we teachers require too much

* This plan was arranged and carried out by Dr. Fred W. Atkinson when he was principal of the Springfield, Mass., High School.

of —? Do you think — might do more studying just as well as not?

6. Roughly, how much time does — spend at home studying? Does — need to be urged to study or not?

7. Does — take books from the library for —self? Roughly, how much time does — spend in reading books (not connected with school work)? What is the character of this reading? Does — read magazines? Newspapers?

8. What steady likes and dislikes has — in school and out? What study, if any, does — complain of as hardest?

9. State any other things (concerning temperament, character, etc.) which we ought to know to be of greatest help and encouragement to —

Pupil's Memorandum

1. What books have you read since —?

2. Which of these books do you especially like and why?

3. What character in these books do you especially like and why?

4. What kind of literature do you prefer, fiction, history, biography, books of travel, essays, poetry, etc.?

5. Who is your favorite author?

6. What newspaper (daily or weekly) do you habitually read?

7. What magazines do you read, and which do you like best?

8. Do you draw books from the City Library—if so, about how many each month?

High School Teacher's Memorandum

Name. Date of beginning of this study. Date and place of birth. Height. Weight. Sight. Hearing. Health. Temperament. Character. General Scholarship (chief mental characteristics. Character of this pupil's mental development). Greatest strength (interest). Greatest weakness (difficulty). Application (studious? Stimulus needed, etc.) Attention. Ability to express (a) orally (b) in writing. Ability to think (influence and reasoning). Ability to memorize. Imagination. Attendance (a) regularity (b) punctuality (c) dismissals. Interests (a) in school (b) out of school. Controlling motives (why does this public attend school, etc.) General deportment (most successful treatment, etc.) Additional data.

Such records of the physical and mental characteristics of pupils must be regarded as a valuable aid to teachers of all grades of schools. They are moreover entirely within the power of teachers to make, with not the slightest danger of injuring the child, as some seem to fear. A simple observation and record of a child's interests, inclinations and powers ought not to be attended by a harmful "prying into his soul", any more than a recitation in geography or history. Of more doubtful value and policy are the investigations of child study which seem to be made in the interests of science. If such investigations are ever allowed, they should be

Investigations
not injurious
to children.

conducted only by trained psychologists and then only with the greatest care.

Supervision by principals closer than by superintendents.

Supervision.—What has been said elsewhere respecting the duties of supervision by superintendents will apply equally to the supervisory duties of principals. The difference between supervision performed by a superintendent and supervision performed by a principal is more a difference of degree than of kind. The principal is supposed to have a more intimate acquaintance with the pupils than the superintendent, and can more frequently visit the schools for all the purposes of supervision—viz.—inspection, examination, and teaching. He may be able therefore to guide the work of teachers more closely than the superintendent can.

Care should be taken however that there be not too much supervision. If the system of schools is not large and the superintendent is able to visit the schools frequently, there should be little supervision of any other kind. In any case the supervision should not be in kind or amount such as will be burdensome to conscientious teachers. For good teachers the supervision will be largely in the nature of support; for poor ones it will be suggestive and helpfully directive. If both supervisor and teacher have a true professional spirit, that is, if they are in the effort to reach the pupils in the best way and seek to be guided by true educational principles, there need be no friction between them. If added to the conditions just named there is in both the sympathy and open heartedness which

always exist among those who are working together in a great cause, not only will there be no friction but there will be a happy and enthusiastic co-operation in all that is done.

In this brief statement of the duties of organization and supervision which properly fall to a principal, no allusion is made to the means employed for securing the right kind of order in the lines and at recesses, nor to his function as arbiter in severe cases of discipline for recalcitrant pupils. Nothing has been said either of the multitudinous clerical duties which frequently are put upon principals of grammar schools in large cities. In all these duties direct service should be the watchword. No rule should be made, no report or record called for, no statistics required that have not a direct purpose of helping to educate the children. Measured by this standard rules of discipline and clerical work will be much more limited than they are in many city schools.*

Direct service
the watch-
word.

A principal must of course faithfully perform the clerical and other duties of administration that are required of him by the school board or superintendent; but if such duties interfere with his highest efficiency as a principal it is his duty to protest against them in the hope that he may give his time only to such means of supervision and teaching as will most directly lead to the great ends for which the schools exist.

* In the *New York School Journal* of Oct. 5, 1901, there is given a list of 157 separate and distinct kinds of clerical work performed by principals of the city grammar schools.

CHAPTER X

THE TEACHER AS ORGANIZER

Duties of organizations devolving upon the teacher.

While the organization of the schools and classes belongs mainly to the superintendent and principal, there are features of organization which must be left wholly or in part to the teacher, such as the making of the daily programme, the division of the class or classes into sections whenever such division seems desirable, the placing of pupils in classes, and the assignment of work in such a way as to protect the rights of all, the formation of plans of government by which the largest measure of self control on the part of pupils is assured, and in general the adoption of means by which the purposes of the school may be most effectively reached.

Forms of organization not to be imposed from without.

All these matters involve plans of organization which have an important bearing upon the welfare of the school. They are no less matters of organization on account of the fact that they are closely connected with the work of instruction and training. Indeed they belong mainly to the teacher because they are so closely connected with instruction and training. Those schools in which the daily programme, the division of classes, the assignment of work, rules of government and kindred matters of organization are imposed from without are likely to be

mechanical and superficial, devoid of that elasticity and originality which are marks of a good school.

The daily programme.—In making the daily programme the teacher should take into account the relative time needed for the various subjects as well as the special needs of classes and individuals. In respect to time limits for the various subjects reference must be had to the requirements of the course of study*, but the adaptation of the programme to actual conditions must be left largely to the teacher. There are classes of pupils also who for various reasons are deficient in a certain subject and need somewhat more time given to it than would ordinarily be given. For these and other reasons the programme may have to be changed from time to time. A fixed programme for all the schools is therefore not to be expected or desired.

The daily programme to be adapted to circumstances.

Effort should be made to allow the pupils opportunity for one or two hours daily of independent study. There are many schools at home and abroad whose programmes do not permit the pupils to have more than three minutes at a time of uninterrupted study. The pupils are either spending their time in recitation or else they are constantly being interrupted in a so-called study hour by pupils asking questions from their seats about their lessons or by teachers making explanation of some difficult point which all the pupils desire to hear.

The programme to allow time for independent study.

* For plans based upon certain theories of time limits see pp. 77-85.

Here perhaps is the weakest point of our graded school system—the failure to lead the pupils into habits of concentration in study or into habits of independent work.

Class to be
divided in some
subjects.

This is the danger of our graded system of schools, but happily it is a danger which can in a large degree be avoided. Two or three short periods of study may be allowed in the programme for all the pupils to study and for individual pupils to go to the teacher for assistance, always in a way so as not to attract attention. In graded schools two or three study periods of twenty-five or thirty minutes each may be secured by dividing the class into two sections, one section reciting while the other is studying. In such studies as writing, drawing, language, and elementary science all the pupils of a class may recite together, but in other subjects the division of a class may be made with advantage on account of more fully reaching the needs of individual pupils, besides affording greater opportunity for study. In the lower grades the school or class may be divided into three or four sections, the pupils at the seats being given written and other work of various kinds.

Advantage of
short intervals
between class.

In those graded schools whose plan of classification embodies the idea of short intervals between classes and frequent promotions there will of course be no difficulty in giving pupils ample opportunity for study.* Two or more classes in a room will be heard separately in all sequential subjects such as arithmetic, grammar, and

* See pages 126-133.

elementary reading, thus giving pupils at least a third of the school time to silent reading or study.

In ungraded schools care should be taken lest the number of classes in the various subjects be too great, thus affording lesson periods of only five or eight minutes each. In some subjects like arithmetic and reading it will be advisable to have several grades, possibly four or five, but in other subjects like geography and language two or three grades of work are quite sufficient. If possible the number of recitations daily should be kept below twenty, and there should be no recitation period of less than ten minutes in duration, however few the pupils reciting may be.

Classification
in ungraded
schools.

The following suggestions respecting the classification of ungraded schools made by the author several years ago may be found helpful.

“The classification of ungraded schools will depend upon circumstances. If there are two teachers (as there should be in schools of more than twenty-five pupils) more minute classifications may be made than if there is only one. In some ungraded schools the older pupils predominate; in others the younger. In some places the older pupils are taken from the ungraded district schools and placed in a central grammar or high school; in other places no higher school of any kind supplements the work of the ungraded school. No exact rule, therefore, for classifying ungraded schools can be laid down.

Classification
of ungraded
schools.

“But in general it may be said that no close classification should be attempted in ungraded schools, but that every pupil should recite in the

Every pupil to
recite in class
for which he is
best fitted.

class for which he is best fitted, whatever the subject may be. For instance, a pupil may be in the second class in arithmetic and in the first in reading or *vice versa*.

“Again, there should be as few classes as possible consistent with the good of all. The false pride of pupils and the ignorance of parents as to what is best for their children should not prevent the teacher from doing his duty in this regard.. Too often the pupil and parent alike measure progress in education by the number of pages of the book that are ‘gone over’. And too often, also, there is some disgrace attached to the pupil who is put into another class.

A suggested
plan of classification.

“All these hindrances to good classification must be met and overcome in one way or another. The parents may be made to see that the older pupils should recite only two or three times a week in some studies and that there may be a less minute classification in some studies than in others. In geography, for example, they may see that a knowledge of one country does not depend upon a knowledge of another, and that drill in one part of the spelling book may be as useful as drill in another part. The following classification might be made in many ungraded schools, consisting of pupils from five to fifteen years of age: four classes in reading, including one class in the reading of history; five classes in arithmetic; two classes in geography, besides the class of younger pupils who are reciting orally lessons in home geography; four classes in spelling, two of which may be heard at the same time; one

class in physiology,—the rest to be heard orally; one class in history; one class in English grammar; and one in language. The singing, drawing and observation lessons may be taught as general exercises to all the pupils at once.

“It may not be well for a new teacher to make such a classification at once, nor carry out all at once the plan of hearing the older pupils recite on alternate days. It might be better for him to adopt for a time the classification which he finds, in the hope that he may gradually change it for the better.” *

How to meet the needs of individual pupils.—
A common defect, perhaps to some extent inevitable under our present system, is the failure of teachers to meet the individual needs of pupils. It is found to be the common tendency of young and inexperienced teachers, and sometimes the tendency of teachers not young or inexperienced, to mechanize the work of instruction and training,—to make all the pupils of a class do the same thing in the same way and frequently at the same time. This tendency is shown in the concert exercises, in the models for parsing and for arithmetical analysis or explanations, in uniform requirements for all, in examination for promotion or rank and in the custom of requiring pupils to “make up” their work after school or at recess,—unmindful of whether that work is important or not as a basis of subsequent study, and sometimes unmindful of the

A common defect of our present system of graded schools.

* Courses of Studies and Methods of Teaching
pp 309-311

health of the pupils. So common are these practices that there may be a measure of truth in the charge so frequently made against the public schools,—that of turning out the pupils after the same model.

Purely individual teaching.

One remedy proposed is to abolish the graded and class system and to follow the individual method exclusively, by which each pupil is to recite as much as he has learned while the others are studying. The encouragement of memoriter work which such a plan involves, the absence of that stimulation which is occasioned in class work by the friction of mind upon mind, and the loss of time involved in the necessary teaching of new and difficult topics, all condemn this means of effecting the desired reform.

Number of pupils to a teacher should be small.

To retain all the benefits of the graded and class system, and at the same time to avoid the dangers which are incident to it, is a difficult if not an impossible task; and yet much may be done in several ways to meet the difficulty. The first way which suggests itself is the reduction of the number of pupils to a teacher to the point at which each pupil may receive such individual attention from the teacher as he needs. Twenty-five or at most thirty-five pupils ought to be the maximum number for each teacher to have, in a graded school, with the understanding that the school shall be divided into two or more sections. In some subjects of the primary school as in reading and number there may be several divisions or groups of six to ten pupils each. Instruction in drawing, language, and nature

study in all grades may be given to the school as a whole.

The needs of individual pupils may be further met by putting them in grades or classes where they can work to the best advantage. Careful attention should be given to both individual and class promotions,—the only consideration being the welfare of each pupil. On every day of school the teacher should be ready to answer the question whether every pupil is placed where he can do the most for himself. The health, future plans, habits, and home surroundings of the pupils, all may help to determine the classes in which they are to be placed and the subjects they are to take. So much at least of child study should be pursued by the teacher as to make him acquainted with the above named conditions of each pupil.

Basis for individual and class promotions.

Occasionally there may be a pupil who by a little extra work in one of the sequential studies like reading in the lower grades or arithmetic in the higher, may be transferred on trial to a higher grade with a view of doing full work later.

The subject of class promotions has been discussed in another place * and need not be considered here further than to say that the standard of judgment above stated as requisite for individual promotions should be established for class promotions.

The adaptation of work to individual pupils may be still further made by indicating in the

Optional and extra studies.

* See pp. 124-126.

course of studies the essential or important matter which all the pupils shall acquire, and the non-essential parts of the course which may be learned with greater or less thoroughness, depending upon the ability of the pupils. The matter of optional studies also has an important bearing upon this subject. It may be found advisable to bring down to the upper grades of the grammar school, in a limited way, the elective system which has been adopted generally in our best high schools. When a number of pupils are clearly benefited by the pursuit of any subject of study it is only fair that they shall have the privilege of taking it. It should be possible also to permit a pupil to drop one or more studies, when it is clearly seen by the superintendent and teacher that such omission of studies will be for his best interests.

Care in the assignment of tasks

Reference has been made thus far to those means of adaptation which are chiefly administrative in character and which are used jointly by the superintendent and teacher. There remains to be mentioned a way of meeting the needs of individual pupils which belongs to the teacher alone; and that is, a plan of tasks and recitations by which all pupils shall be permitted to do the most that they are capable of doing. Instead of giving uniform tasks, as is generally the case, in which the pupils are expected to do the same work or acquire the same amount, the teacher should adapt the tasks to the varied capacities and powers of the pupils, the essential or important parts of a given sub-

ject or topic to be learned by all, and other parts to be studied by such pupils only as have the necessary time and power to learn them. Some subjects, like history, geography, and language, lend themselves readily to such treatment; while others, like mathematics and science, may require care and skill to accomplish the desired end of providing work of such kind and amount as will stimulate every pupil to do his best.

Extra work in
connection
with regular
lessons

The recitation also should be conducted with the same end in view. Of course, under the best circumstances and with the utmost skill on the part of the teacher, there will be some waiting by the best and brightest pupils for those who are slower; and yet, with care, the recitation may be conducted in such a manner as to make it profitable for all to attend and take active part.

For example, in all information studies in which lessons are assigned and recited by topics, all the pupils may be held responsible for what is in the regular text-book, while a few will be expected to consult reference books or other text-books found in the school or public library. The fact that this extra work is entirely optional will be found to be no bar to effort on the part of the brighter pupils, who will be glad of the opportunity to get and to give this supplementary information.

In connection with the reading and literature work there will be abundant opportunities for the encouragement of extra reading by recommending books to be taken from the public library, or by lending books from the school li-

brary. In these days of the publication of the best books in cheap form there is little excuse for the absence from the school library of an abundance of good literature. In mathematics and science the simpler application of principles should be given to all, and the more difficult ones to those only who are able to take the advanced work.

Special topics
for extra
work.

In addition to the daily supplementary work in the various studies for the brighter and quicker pupils, there may be given them occasionally special subjects to report upon, either orally or in written form. This is done with success in the college, and there is no good reason why it may not be profitably done in high and grammar schools. In history, geography, science, and literature subjects are constantly arising upon which much of an interesting nature may be obtained and given in addition to what is found in the regular text-book. In addition to an awakened interest on the part of all, there will be gained in the giving of special topics much good practice in language and in the use of reference books.

An assistant
for aiding indi-
vidual pupils.

In some schools an assistant teacher is employed whose only duty is to go about the class or school assisting pupils who need assistance. This is an expensive plan and unless the teacher is especially judicious in her treatment of pupils who seek assistance it is likely to discourage proper independence on the part of some pupils. A better plan is for one teacher to have a small number of pupils and to provide times in the

daily programme in which needed assistance can be given for a few minutes at a time. Better than having an assistant in a room would be an assistant in a building to whom backward pupils or pupils who are trying to work into a higher class might be sent for assistance in certain subjects. *

The feasibility and use of plans for meeting the needs of individual pupils are not confined to the graded schools. In rural or so-called ungraded schools the opportunity to carry out such plans is even greater, provided the folly is not committed of forcing the graded system of classification upon them; and provided also the schools consist, as they should, of a small number of pupils, —never over twenty-five to a teacher. Here pupils should be assigned in any subject to the class in which they can do the most for themselves,—to the third class in reading it may be, and the first class in arithmetic, or, if necessary or best, to two classes in reading and to no class in geography. The chief value of the rural or mixed school lies in its elasticity of organization, and this should be preserved in the interests of individual pupils. What was said above of the assignment and recitation of lessons and of the giving of special topics in graded schools will apply equally to the ungraded schools; with the added argument that in the latter schools there is, as a rule, more time for independent study than in the former.

Flexibility of classification in rural schools.

* For plans of special classes see p. 139 and Appendix E.

Self control
the chief end.

School government.—In a work of this kind obviously only such parts of the subject of school government should be treated as relate to organization. Is there any organized plan of proceeding which will aid teachers to secure the chief end of school government, viz.—self control? Much has been said of the possibilities for good, especially in the direction of self government, in the adoption of some plan by which the pupils themselves will have a large share in respect to both making the rules of conduct and carrying them out.

The “school
city” plan of
government.

The form of self-government about which most is reported is that which is secured in imitation of existing forms of civil government. Perhaps the so-called “school city” is the most extensively used means of pupil government. In this plan the school is regarded as a separate municipality having most of the officers usually serving in cities, including mayor, city clerk, city treasurer, city attorney, a board of aldermen, judges, policemen, etc. The officers are nominated and elected in much the same way as is customary in cities and the method of administering justice to offenders is in the main similar to the method employed in real life. The advantages claimed by many who have tried this plan are (1) the awakening of a strong civic sense through a clear knowledge of municipal government and actual practice in it; (2) the maintenance of order, which enables the pupils to perform their work well; (3) the “training in coöper-

ation and kindness and emulation to serve the general good."

Another and less tried plan is the "Citizen and Tribune" plan by which the pupils elect officers from their number whose duty is to look after the conduct of all the pupils. The claim is made that the teacher is relieved of much disagreeable "disciplining" of unruly pupils and that the pupils develop a power of self-control. *

The "citizen and tribune" plan.

A full account of the "School City" plan together with opinions of those who have tried it, may be found in "The Gill System of Moral and Civic Training" issued by the Patriotic League, New Paltz, N. Y. For objection to it by Dr. Wm. T. Harris, Commissioner of Education, see The School Bulletin, March, 1906.

Still another and simpler plan of self-government is that plan by which pupils sign an agreement to obey certain well defined rules of conduct, made by the pupils themselves. The plan includes the election of a committee who have supervision of the order everywhere except when the teacher has charge of a room. The results claimed are (1) a happy spirit among the pupils, and a cordially pleasant relation between teachers and pupils; (2) excellent order; (3) a good moral tone; (4) relief of care to the teacher.

The co-operation plan.

There is no doubt that that order in school is best which is secured with few rules and with little dependence upon an exercise of external

* The plan is fully outlined in a booklet written by John T. Ray, Principal of the John Crerar School, Chicago.

Little organized effort needed to secure the best order.

authority, and that that school is accomplishing much in character building whose pupils habitually recognize their obligation to respect the rights and feelings of others and to live to the truth as they see it. It is a question how much of organized effort is needed on the part of teachers to bring up a school to this condition. Doubtless it is accomplished by many teachers with no conscious effort, or if there is effort it is exerted without much machinery of rules, rewards and punishments. With others some devices may be found useful as an encouragement to all concerned.

Separation of pupils on lines of honor and self control.

One such device which has been used effectively in some schools is that of the teacher separating his pupils into grades or lists on the basis of self-control. First is the "roll of honor", consisting of all whose ideas of justice and honor are high and who are willing and able to live up to their ideas of what is right. The members of this list may be given special privileges, such for example, as being allowed full freedom to leave the seat or room at any time. No charge of unfairness or partiality could be made for the bestowal of such privileges by pupils not upon the roll of honor; for the privileges are clearly seen to be a natural result and not an arbitrary mark of favor—and they are freely offered to all who deserve them.

"Roll of honor."

The probation list.

The list below that of the "roll of honor" consists of those whose ideas of right are fairly good and clear but whose powers of self-direction and control are limited. They are

among that large class of children who have been so long under a faulty method of oversight and direction, that self-dependence in matters of conduct is well nigh unknown to them. A majority of children seem to be victims either of a condition in which there has been no curb to their impulses and wishes, or of a method of constant reminders and checks by which an exercise of independence has been denied them. All that these children need is practice, first in choosing for themselves the better of two courses of action, and secondly in living up to their choice. All that is required of the pupils of the second list is a willingness to try to take care of themselves.

It is essentially a proving period for the pupils—a time of attempting to prove their strength, and therefore the pupils of this list may properly be called Probationers or members of the Probation list. If properly approached most of the pupils of any school are ready to be placed in one or the other of the lists named. The probationer will necessarily be treated somewhat differently from the honor pupil,—but both will receive the confidence and assistance of the teacher. There may be occasional slips with members of both lists, but the only question is in the one case complete ability, and in the other effort and sincerity of purpose.

But there may be a small number of pupils, probably never more than five per cent of the whole number, who are not willing even to try to take care of themselves. These pupils delib-

The “oversight” list.

erately make a bid for the kind of control which some teachers seem to be only too willing to accord to the whole—the spying out of disorderly acts and the correcting of them. Of course these pupils cannot be treated as the pupils of either of the other two classes are treated. The attitude that the members of this third list assume demands that there be over them a constant watching—lest some rule of order be violated. For the other pupils there are no rules but one and there is no special oversight. But for these pupils there are as many rules as they demand and there is no time during which they are out of sight of a teacher. There may be some difficulty in naming this list of pupils. The term Oversight list has the advantage of being a reminder of one of the chief characteristics of it.

In extreme cases the pupils of the third list may be subjected to the penalty of being separated from their fellows and of having all social privileges taken from them. They may be obliged to have their recesses alone and be forbidden to speak to their mates at any time. But even for this class of pupils there should be opportunity and encouragement offered for improvement. As soon as they signify their willingness to try to govern themselves and show by their actions ability in this direction, they should be placed in the Probation list and be given a fair trial.

The success of this plan as that of any plan will depend largely upon the way in which it is

carried out. The full value of self direction and self control in conduct will be understood by the pupils as they see the earnest and persistent emphasis which the teacher makes upon it day by day, and as they realize the feeling of satisfaction experienced in successful achievement. Great tact and patience will be needed on the part of the teacher to maintain the continued interest of the pupils. The result need not be feared so long as the teacher thoroughly believes both in the principle and in the children. *

Success of any plan dependant upon the tact and patience of the teacher.

* See the author's *Courses and Methods*, pp. 328-344.

CHAPTER XI

SCHOOLS FOR DEFECTIVES AND DELINQUENTS

Education for the sake of society and the state.

Public school education is maintained for the sake of society and Education for the sake of society and the state, as well as of the individual. It is at once constructive and preventive—constructive in helping to create high ideals and intelligence, and preventive in helping to hinder pauperism and crime. For the normal bodied and minded child the work of education is mainly constructive, and for this reason the duty of the state to foster education for that class, and even to make it obligatory up to a certain point, becomes evident to all. We see that it is a wise provision of statute law for the upbuilding of society and for the happiness and usefulness of individuals that every normal child shall be assured of a common school education.

The duty of the state toward defectives and delinquents.

But if we keep in mind the need of the state to protect itself and the dangers to individuals of physical and mental degeneracy, we may see that the duty of the state toward abnormal or defective children is even more imperative than it is toward the normal or sound ones. It is incumbent, therefore, upon the state to provide means of education for all classes of children who are capable of education, and to provide care for all who are not. With the law upon

the statute book "making" such education and care mandatory, it becomes necessary to define the means of carrying the law into effect.

It is said by good authority that from one-fifth to eight per cent of the children are what may be called abnormal children, *i. e.*, children who are defective either in body or mind so as to need special care or treatment,—the smaller per cent indicating the proportion of children who are feeble minded, and the larger per cent including the children who are abnormally dull as well as those who are physically defective. At present a good proportion of these children are either in the regular schools blocking the progress of others, or else they are outside the pale of the schools waiting to commit some crime before they can be brought to the notice and protection of the state. *

Special treatment needed for abnormal children.

In general, there may be said to be two

* Dr. Edward M. Hartwell, of Boston, in a computation recently made for the writer, reports as follows: "1,384, or 0.324 per cent of the population of school age (5 to 15 years) in Massachusetts in 1895, were non-educable in the public schools; 384, or 0.09 per cent, were mentally defective, *i. e.*, insane or idiotic." Dr. Walter E. Fernald, Superintendent of the Massachusetts School for Feeble-Minded, said in an address before the Boston Homeopathic Medical Society Feb. 6, 1902, "I am confident that if every case was included there would be at least two [feeble minded persons] to every thousand of the population of the states. "

Two classes of defectives. classes of defectives: (1) those that need scientific or institutional treatment, such as the feeble-minded, the blind, and the deaf-mute; and (2) those whose education may, with some modifications, be conducted on lines similar to those of normal children, such as the dull or backward children, and those whose sight or hearing is but partially impaired.

Three kinds of institutions. Upon the assumption that the state must assume the education of the first class of children named, there will be needed three classes of institutions located at convenient places in the state—those for the blind, the deaf-mutes, and the feeble-minded. All of these institutions, with the exception of the non-educable portion of the latter class, should be conducted with the view of making their pupils self-supporting. Industrial or technical training of various kinds will therefore be a prominent feature of the education carried on in these institutions. As they are supported by the state, they will be free to all its citizens, and will afford accommodation and facilities for all who can profitably take the training offered.

Attendance upon these institutions will be compulsory; that is, the state will assume the same authority over its weak subjects which it assumes over its sound ones, by obliging all defective children of a certain age who are not otherwise cared for to take the training it offers in one or another of its institutions. This should be done on the principle that it is the duty of the state to protect the child from the neglect of

the parent or guardian. This principle of protection from neglect is to be applied to all classes of children. But in the case of mentally or physically unsound children there is an added reason for making education obligatory—the reason that has already been given for establishing schools for defectives—namely, that of the protection of society and of the state. The state schools here referred to are for that class of educable defectives who need scientific or institutional treatment. They may be said to be a part of the public school system of the state, because they are free to all residents of the state, and are under the direction and control of the educational authorities of the state.

Education of
defectives
obligatory.

The other class of educable defectives are those which should be educated directly in connection with the city or town public schools. This will be done by separating them into small groups, and by placing over them skilled teachers, with the expectation that they will be treated for the most part individually with special ends in view.

In cities or large towns in which there is a sufficient number of defectives to form into groups, the plan will be simply to separate those of school age—say from seven to fourteen—into groups of ten or fifteen, and place the groups in convenient localities. If the number to be trained is large enough, there should be a classification according to attainment and capacity; but it should be understood that the treatment of this class of pupils will be

Local schools
for defectives

chiefly individual. The experience of Providence, R. I., and other cities with the schools of weak-minded and backward pupils shows what can be done with a class of children whose neglect means degradation and crime. So great is the menace to society of a continuance of this neglect, that the state is justified in obliging towns and cities to properly train in special schools all abnormal children who do not need the institutional treatment of which I have spoken. For the cities and large towns this will not be a difficult matter, as has been shown by experience.

Provision for
country dis-
tricts.

For country districts provision may be made for carrying the children to a central school, or for establishing small home schools in convenient localities. These schools should be under the charge and superintendence of the local public school authorities. In states like Massachusetts, where district supervision prevails, the schools may be under the direction of the superintendent and district committee, the expense of the schools being borne by the towns from which the pupils come. In country districts whose unit of government is the county, the schools may be organized and controlled by the county board and county superintendent, and the expense of carrying them on will be borne by the county.

It is then, to summarize what has been said in this chapter, both right and feasible for all educable children to be included in the scope of the public school system, and to share in its ben-

efits and its obligations. It is also right and feasible for the state to place all educable children of a certain age under the statutory requirement of compulsory school attendance, to the end of giving all its citizens the benefits of intelligence and self-support, and of guarding itself and society against the dangers of ignorance and crime.

CHAPTER XII

RECORDS AND REPORTS

Only useful records to be made.

The first and most important consideration in determining the character and amount of records to be made is that of use. The time has gone by for records of any kind to be made that are not distinctly serviceable in the interests of the schools. Traces of useless records of examinations and deportment of pupils and of fine book-keeping are found in some places; but generally it may be said that teachers and superintendents are too busy with the processes of education to spend much time in recording the supposed results of it, or in keeping an elaborate system of account for show.

The legal requirements with reference to school attendance, certification of teachers, course of studies, etc., differ in the various states and therefore the required records are correspondingly varied. Efforts have been made to establish a plan of statistics in this country which will be uniform and at the same time be limited in their scope to items that are useful for comparison.

The most helpful scheme that has been made is one that was prepared by a committee of the National educational association in 1891. This report with a supplementary report made the following year has been adopted to a greater or

less extent in several states. The following outline was recommended for general adoption. The items are arranged in three classes. The first list includes the essential facts which should be gathered every year. The second list contains statistics, to be furnished every second or third year. The third list consists of less essential items which may be collected at still rarer intervals.

Plan of statistics recommended by the National Educational Association.

I Fundamental Items

1. Number of children of legal school age, classified by race and sex (school population)
2. Number of pupils enrolled on the school registers (excluding duplicate registrations), classified by race and sex
3. Average daily attendance, classified by race and sex
4. Average length of school year (days)
5. Number of teachers, classified by race and sex
6. Number of pupils receiving kindergarten instruction, classified by race and sex
7. Number of pupils receiving elementary instruction (including kindergarten pupils), classified by race and sex
8. Number of pupils receiving secondary instruction, classified by race and sex
9. Number of students receiving higher instruction
10. Number of students in special schools
11. Number of buildings used as schoolhouses
12. Total seating capacity of such buildings

13. Value of all property used for school purposes

14. Average monthly salaries of teachers, classified by race and sex

15. Total school revenue, (1) Income from productive funds and rents, (2) State school fund, (3) Local taxes, (4) Other sources

16. Total expenditure, (1) Salaries of teachers (including supervision), (2) Other current expenses, (3) Permanent expenditure (for buildings, grounds, etc.)

17. Amount of permanent invested funds

II Less Essential But Desirable Items

18. Age classification of pupils enrolled. (1) Number of pupils under six, (2) Number of pupils between six and seven, etc., (3) Number of pupils between fifteen and sixteen, (4) Number of pupils over sixteen.

19. Number of cases of tardiness

20. (1) Number of pupils born within the state

(2) Number of pupils born in other states

(3) Number of pupils born in foreign countries

21. Occupation of Parents (1) Agents, (2) Bankers and brokers, (3) Clerks and salesmen, (4) Domestic servants and waiters, (5) Draymen and teamsters: (and fifteen others)

22. Average number belonging, including, temporary absentees

23. Number of pupils in each branch of study

24. Average age of pupils. Kindergarten, elementary, secondary, higher and special

25 Normal schools (1) Number, (2) Enrollment in normal department, (3) Average attendance, (4) Number of teachers, (5) Expenses

III Occasional Items

26. Number of teachers who have taught less than two years, from two to five years, over five years

27. Number of applicants for teachers certificates, number who are certified

28. Number of teachers graduates (1) of normal schools, (2) of universities and colleges, (3) of high schools, academies, etc., (4) who have received only an elementary education

29 Number of pupils dropped and readmitted in the course of the year

30 Number of hours in each school session

31 Length of recesses or intermissions and time of beginning

32 Number of cases of corporal punishment

33 Number of pupils in each grade promoted to next higher grade

Teachers' Annual and Monthly Reports.—It should be observed that the conditions differ widely in the various cities and towns, and that what is advisable or necessary in a large system of schools may not be needed in a small one. The danger lies in requiring of teachers too many records rather than too few. The question should always be asked, before any new statistics are required, "Are they actually needed to make more effective the work of the schools?" If intelligent teachers and superintendents can-

The danger of requiring too many records.

not see any possible connection between the ends they desire to reach and the records they are required to make, the requirements may well be reconsidered and revised.

Annual re-
ports.

No reference is made here to the registers, returns, and certificates whose forms are either designated by law or determined by the requirements of state or national authorities. The forms of records are usually designated by blanks sent out from the central offices. Sometimes additional information is needed for the report of the school board for superintendent, such as is called for in the following set of questions:

Report for the School Year ending————
————school————teacher.*

This blank and others which follow, are made from blanks in actual use. No credit is given, however, for the reason that in most cases some changes have been made.

1. Number of pupils tardy,——; once,——; twice,——; three times,——; more than three times,——.

2. Whole number of cases of tardiness,——.

3. Number of pupils absent,——; one half day,——; two half days,——; more than one day,——.

4. Names of pupils neither absent nor tardy:
————.

* This blank and others which follow, are made from blanks in actual use. No credit is given, however, for the reason that in most cases some changes have been made.

5. Number of cases investigated by the truant officer,——.

6. Number of cases of truancy,——.

7. Number of pupils who have been truants, ——; once, ——; twice, ——; three times or more, ——.

8. Number of cases of corporal punishment, ——.

9. Number of pupils who have been corporally punished, ——; once, ——; more than once, ——.

10. Aggregate number of days' attendance of all the pupils,——.

11. Number of days in which the school was in session, including legal holidays,——.

12. Number of seats,——.

13. Number of visits during the year:

By members of the school committee,——.

By the superintendent of schools,——.

By all others,——.

Monthly or term reports containing facts which the superintendent desires to know or to have at hand are sometimes required from teachers, such as are called for in the following blank:—

Monthly or
term reports.

Report for the month ending———

———school———teacher.

1. Enrolment,——.

2. Average membership,——.

3. Average attendance,——.

4. Per cent. of attendance,——.

5. Number of cases of tardiness,——.

6. Number of pupils tardy,——.

7. Dismissals,——.

8. Number of pupils neither absent nor tardy,——.

9. Number of cases of truancy,——.

[On the back of this sheet write the name, age and residence of each truant, and time of truancy.]

10. Number of cases of corporal punishment,——.

11. On the back of this sheet give the following facts concerning non-resident pupils: Name, ——; name and residence of parent or guardian, ——; number of weeks attendance since beginning of school year,——.

Teachers' monthly or quarterly record of what has been done.

Teachers' Special Reports.—A superintendent needs to have as intimate a knowledge as possible of what each teacher and school is doing. This knowledge he gets in part from personal inspection and in part from special reports of teachers, giving somewhat in detail the subjects that have been treated during a given period. The monthly or quarterly record of what has been done by each class is also useful to new and substitute teachers. It serves as a guide to such teachers in taking up the new work, and enables them at once to meet the needs of every class and pupil in an intelligent way. To aid teachers of graded schools in making the desired record, the following blank might be furnished them:—

School record
for the _____ ending _____
_____ school _____ teacher

[To the teacher: Please fill this blank in duplicate at the close of the term, sending one copy to the superintendent of schools and leaving one copy in the desk of the school. If you are to leave the school in the middle of the term, please fill the blank for a

part of the term, disposing of the copies as before mentioned. On the other side of this sheet, under the head of remarks, give the kind of scholarship, characteristics, etc.]

Subject	Grade	Grade
Reading.		

Space is to be given in the blank for each branch of study.

On the reverse side of the sheet the blank will be as follows:—

Pupils of grade

Name	Age	Remarks

In ungraded schools the work done might be outlined by subjects and classes, as indicated in the following blank:—

Town of _____
 _____ school _____ teacher

Class Record in [subject to be written here]
 [Here may be inserted directions to teachers, as given in previous blank]

Class	Number of pupils	Record of work done
First,		

On the reverse side the name, age, etc., of the pupils will be written, as provided in the previous blank.

Daily programme of exercises to be sent to the superintendent.

The information given in the school and class records is supplemented by a knowledge of what each school is doing daily and hourly. Such knowledge enables the superintendent to know when he may go to a school to hear any given exercise which he wishes to hear. The teacher should therefore send to the superintendent a carefully planned daily programme at the beginning of each term, or whenever a change in the programme is made. For purposes of clearness and definiteness, as well as of assistance to the teacher, forms similar to the following might be provided:—

Order of exercises

_____school_____grade
 _____teacher

[Make two copies, one to be kept on the desk, the other to be sent to the superintendent's office.]

From	To	Recitation	Study

Another form might be as follows:—

Time		Recitation	Busy work and Study			
Begins	Length		Grade I (lowest)	Grade II	Grade III	Grade IV

Still another form is suggested which will include a statement of the amount of time given

to recitation and to study for each grade of pupils. For the assistance of teachers a suggested apportionment of recitation time for the various subjects might be printed on the blank. The following blank is designed for an ungraded school. It may be modified to suit circumstances.

Programme of daily recitations

for the _____ ending _____ 190

_____ school _____ teacher

Subject	Time		1st Year		2d Year		3d Year		4th Year		5th Year		6th Year		7th Year		8th Year	
	From	To	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2

Total time in school day, min.

Opening exercises, min.

Recesses, "

Physical exercise, "

Total, min.

Time left for recitations, min.

For first year pupils, min.

For second year pupils, min.

For third year pupils, min.

For fourth year pupils, min.

For fifth year pupils, min.

For sixth year pupils, min.

For seventh year pupils, min.

For eighth year pupils, min.

Total min.

Suggested Apportionment of Time to the Several Subjects of the
Several Years

GROUPS OF SUBJECTS	1st	2d	3d	4th	5th	6th	7th	8th
I LANGUAGE: including reading, writing, spelling, memory work, English, grammar, foreign language .....	.42	.42	.38	.32	.32	.32	.32	.33
II MATHEMATICS: including arithmetic, algebra, book-keeping, geometrical exercises .....	.12	.12	.15	.16	.16	.16	.16	.20
III ELEMENTARY SCIENCE: including nature study, physiology, geography, etc. ....	.12	.12	.15	.20	.20	.20	.16	.12
IV HISTORY: including biography, history, civil government .....	.10	.10	.10	.12	.12	.12	.15	.15
V MISCELLANEOUS: including drawing and arts, industrial training and singing .....	.24	.34	.22	.20	.20	.20	.20	.20

EXPLANATION:—The 1 and 2 in columns marked 1st year, 2d year, etc., may refer to divisions of the same class; or, in schools where promotion occur twice a year, may refer to First Half Year Pupils and Second Half Year Pupils. To indicate which division of a class is reciting at a certain time, put a cross (x) under 1 or 2 in the proper Year column, on the line opposite the subject. If the class recites as a whole and not in divisions, put the cross (x) in the middle of the space, on the dotted line, in the proper Year column. Where the exercise includes the whole school, put a cross (x) in dotted line in such Year column as there are classes in the school.

Corporal punishment report.

The teacher should send to the superintendent the details of any important event of the school, such as a case of truancy or of corporal punishment. To aid him in giving full and exact information, blanks should be furnished in which the desired points are indicated. For example, in a case of corporal punishment such questions as the following might be given in the blank:—

1. Name and age of person punished
2. Date of punishment
3. Manner and extent of punishment
4. Witness

5. What was the offence?

6. What do you know of his general character and home surroundings?

7. What previous offences has he committed, and what means of correction were employed?

8. State other facts of importance, such as response of parents to reports, times of previous punishments, with results, etc.

Reports to Parents.—To secure the co-operation of parents, occasional reports should be sent them of the character of the work done in school by their children. It is not necessary to send elaborate reports by percentages, nor is it necessary to send them very often. It is sufficient to send monthly or bi-monthly such information in respect to attendance, conduct and work in each subject as would be elicited in answer to the questions: How is my child doing in each branch of study? What is his behavior? This information should be given in the briefest possible form, cases requiring explanation being left to special reports, which will be referred to later.

Reports to parents should be direct and simple.

The report may be made upon a card of convenient size or upon a stiff paper folder, and enclosed in a stiff paper envelope addressed to the parent. Letters may indicate the character of the work done, as A for excellent, B for good, C for fair, D for poor, and E for very poor. It would be well if the report for each branch of study could be given in a double column, so as to indicate both attainment and effort. Provision should be made either upon the face or

For cases of pupils who are thought to be able to do a greater amount of work, and who may with extra effort be entitled to a special promotion to a higher class, a form of letter may be furnished the teacher to be filled out of some such nature as the following:—

Various forms
of reports to
parents.

—does the work of the class so well and so easily that I am led to believe—will be able with some extra work to go into a higher class before the regular time of promotion. If in your opinion—health will warrant—taking up extra work, and if you think it desirable for—to do so, will you kindly inform me, or call at the schoolroom soon for consultation.

If for any reason a pupil does the work assigned to him so poorly as to render his retention in his class doubtful, his parents ought to be informed of the fact in sufficient time for them to co-operate with the teacher in securing from the pupil a greater degree of effort if deemed desirable. At least two months before the regular time for promotion a letter in some such terms as are expressed in the following blank will be found useful both in securing the co-operation of the parents and in preventing possible complaints:—

You will see by—monthly report that—is not doing thoroughly the work assigned. Thus far this term neither the daily work nor the written examinations indicate that it will be best for—to go into a higher division next—but that it may be necessary for—to review the present studies another term. If, however, you think it possible or best for—to do more work, will you please call here at the schoolroom or drop me a note, so that we can have a better understanding of—needs and capacity, and arrange the work with reference to them.

The co-operation of parents is especially needed in dealing with unruly pupils. It may be secured by the teacher sending a letter in the following terms:—

You will see by—monthly report that—deportment has not been good. I am sorry to inform you that it is still unsatisfactory. I think it best to inform you of the fact before any serious form of punishment is resorted to.

In all the blanks for letters here mentioned it will be understood that dotted lines for the date, address and subscription will be printed, also lines for special explanations by the teacher.

A continuous record of the condition of children.

Pupil's record. The recording of a general statement of each pupil's characteristics mentioned above suggests the desirability of extending the record so as to give details and to cover a period of years, somewhat after the manner of the life book kept in the schools of France. The record may be made periodically, as at the close of a term or year, or it may be made whenever a noteworthy observation is made of any pupil's conduct or work. The following blanks suggest the simplest method of following the former plan:—

Born in _____ ; on _____

Name, _____

Parent's name, _____ Address, _____

GRADE																				
YEAR	1906-1907				1907-1908				1908-1909				1909-1910				1910-1911			
QUARTER ...	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Days present																				
Scholarship.																				
Effort.....																				
Conduct																				

A means excellent ; B, good ; C, fair ; D, poor ; E, very poor,

Name, _____

Parent, _____

Place and Date of Birth, _____

Time of Observation	School	Weeks Attendance	Punctuality	Scholarship	Weak Points in Scholarship	Power of Application	Interest	Physical Defects

A more elaborate and in some respects a more useful record would be that made in small notebooks, one notebook being devoted to each pupil, and being intended for a series of years. The record could be made at regular or irregular times. The pages of the book might be blank

for statements of any kind that the teacher is disposed to make, or have printed upon them topics or questions to indicate to the teacher desirable points of information. The following blank page is suggested:—

1. Date of observation
2. Age of pupil,———years,———months,———days
3. Sight (good or defective)
4. Hearing (good or defective)
5. General health (good, fair, poor)
6. Temperament (nervous, equable, sluggish)
7. Power of observation (good, fair, poor)
8. Power of attention (good, fair, poor)
9. Power of application (good, fair, poor)
10. Memory: verbal,———; thought
11. Imagination: reproductive,———; creative
12. Language:———; originality———; fluency
13. Reasoning (good, fair, poor)
14. Leading feeling through which to govern
15. Self-control (good, fair, poor)
16. Industry (good, fair, poor)
17. Obedience
18. Truthfulness
19. Trustfulness
20. Subject of deepest interest
21. Objectionable habits
22. General remarks

The study and knowledge of individual children such as is implied in a proper filling out of the above blank two or three times a year may not be possible under conditions which now exist in most places; but in time to come, when the largest number of pupils that one teacher will be expected to know and teach is thirty, not only

will it be possible for such a study of individual children to be made, but there will grow out of it (if good teachers are permitted to teach) such corrective and constructive individual work as will enable each child to do the most that he is capable of doing and be the most that he is capable of being. Then will be accomplished the purpose of education, which Plato declared to be "the giving to the body and to the mind all the beauty and all the perfection of which they are capable".

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APPENDICES



The Evolution of School Supervision

APPENDIX A.

The evolution of a system of public education, or of any function of it, is best seen where the will of the people has had full and free opportunity to express itself, and where sufficient time has elapsed to allow experiments to be tried and mistakes to be corrected. The place in this country in which these conditions have been most fully met must be admitted to be Massachusetts. In that State, whatever may be said of the mistakes and failures that have been made, they were the results of conditions for which the people themselves were responsible, and which the people only, either directly or indirectly, could permanently improve. Moreover, when the conditions were improved, the improvements were not superimposed from without, upon an unwilling or an unthinking people, but were made the basis of still further improvement. Only in this way does a democratic state avoid the dangers of frequently changing legislation.

Conditions most favorable for the improvement of a system of public education.

In speaking of the experience of Massachusetts, Dr. William T. Harris says:* “In studying the records of this State one is impressed by the fact that every new movement has run the gauntlet of fierce and bitter opposition before adoption. The ability of the conservative party has always been

* Martin's *Evolution of the Massachusetts public school system*, p. viii.

conspicuous, and the friends of the new measure have been forced to exert all their strength, and to eliminate, one after another, the objectionable features discovered in advance by their enemies. To this fact is due the success of so many of the reforms and improvements that have proceeded from this State. The fire of criticism has purified the gold from the dross in a large measure already, before the stage of practical experiment has begun.''

Four epochs of
school super-
vision in
Massachusetts.

There have been up to the present time four quite distinctly marked periods or epochs of school supervision in Massachusetts. The first period was a time in which supervision consisted only of such oversight and direction of the schools as each community or municipality saw fit to provide, with no legal limitation or obligation beyond the duty of providing teachers and places for schools.

School super-
vision, from
1647 to 1789.

This period dates from the passage of the ordinance of 1647, by which all towns of a given number of householders were obliged to support schools of a certain kind. No provision was made in this law for the appointment of officials to see that the schools were established and maintained or to oversee them. As a matter of fact, these functions of supervision were performed in various ways by the towns. In some towns the school or schools were established and controlled by the electors themselves in town-meeting. In others these duties, or a portion of them, were committed to the resident ministers of the gospel and selectmen—or to the ministers alone. In some cases special committees were appointed either alone or in conjunction with the ministers and selectmen to employ the teachers and superintend the schools. The election of teachers was determined in part by the law which

provided that the master of the grammar school was to be approved by the minister of the town and those of the two next adjacent towns.*

As may be supposed, the methods of supervision in this early time varied quite as much as did the means of organization, depending largely upon the interests and disposition of the persons employed to look after the schools. As these persons were quite generally clergymen, and as the importance of their function in education was universally recognized, it may be presumed that the religious or theological interests of the children were carefully guarded by all directive agencies possible. Thus it was that the ministers examined the children regularly upon the catechism and Bible and upon the sermon of the preceding Sunday. This might be done by the minister alone, or by him in conjunction with his colleagues in their regular formal visits.

The beginning of a new period in the history of school supervision was marked by the passage of a law in 1789, which authorized the employment by the towns of a special committee to look after the schools. This was the first legal recognition of any function of supervision beyond the employment and examination of teachers. It marked the beginning of that system of town and city supervision by school committees which now so extensively prevails. The practice, under the new law, of placing the schools in the charge of school committees, increased, until in 1826 it was made obligatory by law.

School committees authorized in 1789.

The same law which authorized the employment

* *Acts and resolves of the province of Massachusetts Bay*, i., p. 470.

The beginning
of the district
system.

of special town committees sanctioned the already common practice of dividing the towns into districts in which schools might be established. The enactment of this law was the beginning of the celebrated district system, which was destined to test to the uttermost the benefits and dangers of extreme local government in the direction of school affairs. In rapid succession the districts grew in importance in relation to the management of the schools, from the possession of power to hold meetings of citizens and decide upon schoolhouse sites to that of raising money for buying land and for building and furnishing the school buildings, until in 1827 each district was authorized to be represented by a man—elected either by the town or district—who was endowed with authority to employ the teacher.

Faults and
weaknesses
of the district
system.

It is hardly possible to conceive a plan of supervision which has more elements of weakness than law just referred to. Two different and frequently hostile agencies were employed—a prudential committee which prevailed soon after the adoption of the mittee and a town committee jealous of their prerogatives as examiners and supervisors. When there was not collision between these two agencies there was likely to be collusion—and it is difficult to say which wrought most confusion and mischief to the schools. “The passage of the law providing for the creation of the office of prudential committees,” says George H. Martin in his *Evolution of the Massachusetts school system*, “marks the utmost limit to the sub-division of American sovereignty—the high-water mark of modern democracy and the low-water mark of the Massachusetts school system.”*

The third period, which may well be called the

dark period of supervision, extended to the time when towns in large numbers, seeing the disastrous consequences of this dual system, voluntarily abolished that part of it—the district system—which prevented the securing of the best teachers. If there were apathy, ignorance, and misdirection in respect to supervision during this period, there were also signs of a real awakening of popular interest in the common schools. The existence of wrong methods of supervision and consequent results in poor schools aroused a group of enthusiastic reformers who were most diligent in pointing out the necessity of a more adequate provision for the schools. Horace Mann, James G. Carter, Charles Brooks, Edmund Dwight, and other leaders, each in his own way, set to work for a better order of things. And although they did not immediately secure all the results they hoped for, enough was done to give an impetus to education which was most potent in forming our modern system of common schools.

The dark period of supervision.

Through the efforts of these men normal schools were founded, a general school fund was raised, and a State Board of Education was established. All these formative measures had a powerful and direct effect upon the administration of the public schools, first in helping to abolish the district system, and, secondly, in leading school committees to improve their means and methods of supervision. Ever after the establishment of the State Board of Education in 1837 the board and its secretary and agents were most assiduous in their efforts to induce the towns to maintain the town system alone, and to secure the

Progressive agencies established.

passage of a law which would forbid the district system to be adopted in any town.*

Work of the
state board of
education.

While it was rendering this service it was at the same time in various ways helping the school committees to improve the character of their supervision. Two circumstances seemed to contribute to this end: first, the necessity of having a number of well-educated men on the school committee able to examine candidates presented for teachers' places, and, secondly, the ever-advancing standard of requirements for teachers. While the normal schools aided not a little in encouraging a demand for better teachers, it was largely to the constant and eloquent appeals of Horace Mann, through addresses and reports, that the people came to recognize the importance of securing the best teachers possible.

Members of
school com-
mittees ap-
pointed as
supervisors.

It is a significant fact that with the improvement of the teaching there grew up an ever-increasing need of more and better supervision on the part of school committees. It was by the various school committees, as expressed in their reports, that the demands for what is now called skilled supervision were most urgently made. At first one and another board of school committee selected one of its own number to perform the duties of supervision, on the plea, doubtless, that even an unprofessional supervisor employed all the time could do the work more intelligently than could several men in odd times of a busy life. Thus the school committees of Cambridge in 1836 and of Gloucester in 1850 had each

* The district system was abolished in 1859, and the act of abolition was repealed the same year. It was again abolished in 1869. A law was passed in 1870 allowing any town by a two-thirds vote to re-establish the system. It was finally abolished in 1882.

delegated to a member certain supervisory duties, and had designated him superintendent of schools.

The first instance of the appointment of a superintendent of schools other than that of a member of the school committee was in Springfield in 1840. The superintendent who was appointed remained in office but two years. The first permanent appointment of such an official was made in Boston in 1851. From that time the experiment was regarded as a success, and in 1854 a law was passed, amended in 1857 and 1860, authorizing towns and city councils to require the school committee "to appoint a superintendent of public schools who, under the direction and control of said committee, shall have the care and supervision of the schools." Under this law the cities and large towns, one after another, adopted the plan of supervision by superintendents, until in 1879, twenty-five years after the permissive bill was passed, thirty-five cities and large towns had employed superintendents for full or nearly full time.

During all these years in which the cities and large towns were providing themselves with skilled superintendents, the desirability of making some provision by which the smaller towns of the Commonwealth could have the benefit of this supervision was constantly urged by the Board of Education and its executive officers. It is not necessary here to give in detail the history of the struggle in behalf of this extended supervision. Suffice to say that in 1888 a law was passed by which two or more towns were permitted to join together in employing a superintendent of schools, the expense therefor to be largely borne by the State. This law was amended at various times, and under its provisions during the following twelve years a large majority

The appointment of superintendents in a few towns.

Skilled supervision authorized by law

Supervision for the smaller towns provided for.

of the towns concerned accepted the provisions of the law and formed themselves into districts.

Skilled superintendents made mandatory.

So strong was the sentiment in favor of the measure that, following the time-honored practice of allowing mandatory legislation to wait upon the results of permissive laws, the legislature of 1900 passed a bill obliging the school committees of all towns and cities to employ a superintendent of schools after July 1, 1902, those towns having a valuation of less than two and a half million dollars to be governed by the law relating to union districts. This bill was passed in full recognition of the great principles that teaching and training children need the direction of trained experts, and that what affects for good or ill one part of the State affects all parts.

The superintendent an expert advisor and director, not an overseer.

It took the liberty-loving people of Massachusetts more than a century of tribulation and effort to learn these great truths, but the end attained was worth all it cost. So long as teaching was a trade, an overseer only was needed—someone to see that the quantity of service was what it should be; but as soon as it became a profession the service of an expert adviser and director was demanded to make sure that the quality of the work done was of the right kind.

The law of 1888 strengthened and improved.

Under the law of 1888 all unions were made by the voluntary action of the towns, each town electing what district it shall join. To prevent the possibility of towns being left without a superintendent, a law was passed in 1903 making it the duty of the State Board of Education to form or readjust union districts whenever it is necessary to do so. A change in the law was soon after made whereby district superintendents must receive from the State

Board a certificate of qualification before they can be elected. *

It is difficult to contrast the supervision of seventy-five or fifty years ago with that of the present day, as there is no record preserved of what was done in the earlier time. It is safe, however, to assume that in most places not much directive or even suggestive influence was exerted upon the schools beyond the formal visits of the school committee, at which their superior knowledge was aired, the pupils surcharged with platitudes and advice which they could not understand, and the teacher flattered by the assurance that most excellent progress had been made.

The kind of supervision fifty years ago.

The annual reports also of former times cannot be said to have greatly affected the schools or public interest in them, for they were generally filled with glittering generalities concerning education, and fine-spun commonplaces respecting the virtues or faults of youth or the duties of parents. In many instances the reports are found to contain such statements respecting the condition of the schools as to give assurance that perfection was reached, or from repeated statements of continued improvement that the schools at one time must have been in a deplorable condition. When called upon to descend to particulars in their report, the school committee made a running commentary upon each school of the town, or tried to show the importance of giving more time to spelling and arithmetic.

While there are vestiges remaining in modern practice of these archaic remains of innocent official diversions, there are positive evidences of a distinct

* The details of supervision under district plan are given in Appendix B.

Present powers of superintendents of schools.

advance on all lines of active professional direction of school affairs. Where superintendents are employed the schools are inspected and examined by persons who have made a lifelong study of education, and who have won the right to lead the teachers, by years of successful practice. They are given by the school committees large powers in all the details of school administration which require professional knowledge and experience. The extent of those powers is shown by answers to recent inquiries sent to the superintendents of schools in 233 cities and towns of Massachusetts. The following table shows the degree and extent of authority given to these superintendents.

DUTIES	NUMBER OF TOWNS IN WHICH CERTAIN DEGREES OF AUTHORITY ARE EXERCISED BY SUPERINTENDENTS				
	None	Advisory	Joint	Full	Unanswered or Uncertain
1. Selection of text-books	8	85	44	92	4
2. Selection of reference books	9	88	38	93	5
3. Selection of apparatus	6	81	35	103	8
4. Making of course of studies	3	41	21	164	4
5. Nomination or certification of teachers	19	67	40	95	12
6. Appointment of teachers	45	89	60	21	18
7. Suspension of teachers	41	104	56	16	16
8. Dismissal of teachers	48	102	61	15	7
9. Inspection and direction of teachers' work .....	..	3	8	218	4
10. Calling and conducting teachers' meetings .....	..	1	2	224	5
11. Promotion of pupils	4	16	19	187	7

The figures cited make a remarkable showing. They show that to a large majority of the superintendents practically full power is given in the inspection and direction of the teachers' work and in calling and conducting teachers' meetings. If

their powers stopped here, their appointment would be justified. But they are given further duties which bear directly upon the welfare of the schools. About 40% of them have full authority in the nomination of teachers and in the selection of text-books, reference books, and apparatus, while nearly all the others have advisory or joint authority in performing those duties. In over 70% of the places reported the superintendent has full power in making courses of studies, and in over 80% of them he has full power in all matters of promotions of pupils.

The significance of these facts may be more fully realized when it is considered that they relate to persons who, with few exceptions, give their entire time to the business of supervision,* and whose work extends over all the schools of the State.

The professional character of their work is further assured by the fact, shown in the returns, that about three-fourths of them are college or university graduates, and have had an average of over 12 years' experience in teaching. Of the remaining number nearly all are either graduates of normal schools or have been students in college from one to three years.

This statement of present conditions does not take into account the supervision that is quite generally placed in the hands of grammar-school principals in the cities and large towns. There are at least one hundred municipalities in which the grammar-school principals, under the direction of superintendents, have from eight to thirty schoolrooms to visit for

The professional character of the work of supervisor.

Supervision of principals and special teachers.

* Of the 162 professional superintendents now engaged in 265 cities and towns, 23 are principals of high or grammar schools. Three others are employed only a portion of the time.

the purpose of supervising the work done. The supervisory duties performed by special teachers of manual training, singing, physical culture, and drawing ought also to be considered in making up a record of what is now done in supervision. Nearly all of the 143 special teachers of drawing, and a large proportion of the 186 special teachers of singing, have more or less supervision of the work done in these branches by the regular teachers.

No exact measure of improvement in supervision possible.

A complete statement of the changed character of supervision in Massachussetts would involve a description and comparison of detailed methods existing at various times. That, however, is manifestly impossible on account of the meagreness of data concerning past methods now attainable and the great variety of methods employed at the present time. No two superintendents, for example, will be likely to agree upon the precise methods employed in conducting teachers' meetings or inspecting schools; yet in these respects, as in all other duties that have been noted, the tendency in recent years toward what may be called professionalism in supervision has been most marked.

Work actually accomplished by superintendents.

Instead of commending merely formal and *memoriter* work, and examining in such a way as to encourage such work, as was formerly the case, superintendents have become more and more urgent in requiring thoughtful and original work from pupils.

The teachers have been helped by superintendents in an increasing measure to employ rational methods of teaching rather than imitative devices. They have been more fully supported in an exercise of freedom and individuality in their work, and have been assisted to learn in good ways the principles of their profession. In short, there have been no

great progressive movements in public-school education in which superintendents have not had a prominent part, both in shaping and in fostering them. No more convincing testimony to the value of skilled supervision could be offered than that which is freely given by our best teachers, who invariably prefer to teach where such supervision exists, by which they are supported in their best efforts and are led to greater proficiency in their profession.

Broadly speaking, the history of public education in Massachusetts may be said to have had two periods—one in which the people in their fidelity to local self-government kept the immediate management of the schools in their own hands, and the other in which the people with a control of the schools no less strong than before, sought in increasing measure to give into the hands of educational experts the direction of that part of the work of the schools which required professional knowledge and skill. It is the tendency of this later period which helps us to forecast the school supervision of the future. It may be assumed with confidence that the schools or their management will not be widely separated from the control of the people. It is safe also to assume that the schools will be so far removed from such control as to warrant independence and wisdom of action on the part of school committees and superintendents.

Two periods of public education in Massachusetts.

If these assumptions are correct, the school committees will not under any circumstances be appointed officials, but will be elected directly by the people. The number of members constituting a board will be small—not in any case over twelve, and generally less than seven. Their term of office will be sufficiently long for them to acquire a good knowl-

Desirable conditions respecting the number of members of school board and their term of service.

edge of their duties, and will expire at such times as to enable a majority of the members to remain in continuous service.

The respective duties of school boards and superintendents to be defined.

Following the best practice of the past, we shall expect to find in the supervision of the future a unity of service and at the same time a well-defined line of separation between the duties of the general supervisory board on the one hand and those of the expert supervisory force on the other. The school committee as a board will have general charge of the schools, all matters of detail being left to executive officers who will be held responsible for results to the general board. In all matters relating directly to the work of the schools the superintendent will take the initiative, and in some of these matters he will have full power. He will take the initiative in the selection of teachers and choice of text-books, and he will have full power in the making of courses of study, in the placing of pupils in school, and in the direction of the teachers' work. The school-attendance officers and directors of hygiene will be under his direction, and such other executive officers as have to do directly with the work of the schools.

A business agent in cities and large towns.

In cities and large towns there will be a business agent who will attend to all matters of buildings and of supplies other than school equipment. In towns where such an agent cannot be exclusively employed, the work will be delegated to such persons as can perform the service most effectively and economically.*

* Full details of the history of school supervision in Massachusetts and the duties of superintendents of schools are given in a special report upon city and town supervision of schools, printed in the *Sixty-third annual report of the Massachusetts board of education*, p. 291-330.

When the respective duties of the school committee and its superintendent are determined, and both parties trust each other, there will be no need of any intermediary agencies, of district committees, committees on text-books and supplies, and on nomination of teachers. These nesting-places of jobbery and trades will exist only in memory of the time when the people permitted their schools to become a prey to political ambition and selfish greed. The school board of the future will act as a whole in all matters of business, and as a whole will meet such recommendations of the superintendent, relating to educational questions, as need its action.

District committees and many special committees to be given up.

In large places some supervisory duties will be delegated to assistant superintendents, principals of schools, and, in rare cases, to special teachers. But, in any case, there will be but one superintendent, who alone will be held responsible to the board, and who, therefore, must see to it that all supervisory agencies under him are in full accord with his policy.

Assistants to superintendents in large places.

As has been intimated, the functions here outlined are confidently regarded as belonging to the school supervision of the future because they are the logical outcome of past and present tendencies. With equal confidence, and for the same reason, they may be expected to be universally adopted throughout the State by such legislation as will make them compulsory.

Assurance of progress in the future.

When the present law, compelling all towns to employ professional superintendents, has been tested, and when the present practice, in many places, of giving large responsible powers into the hands of the superintendent becomes well-nigh universal, protection from the possible dangers of charlatanism and politics will be asked for all towns and cities of

A forecast of what may be expected.

the Commonwealth which are not disposed to protect themselves—and it will be granted by the passage of a law defining the duties of the general supervisory board and of the superintendent. When that time comes, place-seekers for the sake of gain or of bestowing favors upon friends will no longer press their claims for membership upon school boards, and only those persons will be elected to that office who take a strong interest in the schools and who are willing to give their best energies for them.

Thus far in this statement matters of local supervision only have been referred to. The fact that the authority and duties of the State Board of Education in Massachusetts have remained essentially the same for upwards of sixty years is warrant for believing that the supervision of the future will not be centralized to the extent of having large responsibilities in the hands of officials far removed from the people. There will doubtless be in the future, as in the past, an increasingly high standard of educational effort and attainment required throughout the Commonwealth; but that standard will be set by the people, through their representatives, and be embodied in statute law.

Needed
features in
statute laws re-
lating to school
supervision.

This law will define a minimum of qualifications for superintendents and for teachers, whose professional preparation will be assumed by the State free of cost for all who desire it. The chief functions of the State Board of Education will be to provide this preparation by the maintenance of normal and training schools for all classes of teachers, to see that all State aid for schools is wisely distributed, to see that the responsibility of maintaining a high degree of effort on the part of

the towns is fully met, and to advise school officials as to good means and methods of keeping their schools up to a high standard of excellence. Besides all this, it will continue to be the duty of the board and its executive officers to arouse the interest and enthusiastic devotion of the people in behalf of the public schools.

What has been said thus far pertains to conditions which exist in Massachusetts. It may be assumed, therefore, that the conclusions reached belong only to that state. But if the principles stated as to the relation of the people to the schools are true, and if the process of growth outlined is a natural process of evolution, the conclusions reached will apply, not only to Massachusetts, but to every other state as well. The duties of the state and local boards of administration will be so adjusted that the functions of the former will be only general and advisory, while the functions of the latter will be limited only by wise general laws. Administrative boards will not be given skilled supervisory and executive duties which belong to the superintendent alone. Superintendents will not be burdened with financial and judicial duties which belong either to the administrative board or to a court of law, nor will the field of their work be so extended that they cannot have an intimate knowledge of each school under their charge and be able to direct wisely the work of each teacher.

The exact form of legislation and administration in other states is not likely to be the same as it is or will be in Massachusetts, nor need the steps leading to a well-adjusted system of supervision elsewhere be so slow or difficult as they have been in that State, but the features of both organization and

The duties of state and local boards to be outlined in all states.

Forms of legislation and administration not to be the same in all states.

means of applying it will be eventually quite alike in all states. That is, there will be maintained throughout the country that true equilibrium of central and local processes which will insure steadiness of purpose in establishing and maintaining high ideals of public education. Moreover, there will be that "peaceful, concerted action throughout the whole, without infringing upon local and individual freedom in the parts" which John Fiske declares to be the "chief aim of civilization viewed on its political side."*

A forward
look.

When that time comes the dangers of centralized authority on the one hand and of misguided self-government on the other will no longer exist; school boards will not be found wrestling with educational theories and their application for the purpose of winning the applause of an admiring constituency; school superintendents will no longer be forced to exhaust their energies in keeping records and statistics for purposes of show, or in doing the errands of school boards; teachers will not be prevented from doing their best work by unwise or conflicting directions from superior officers; and the people, regarding the schools as the surest protection from the dangers of individual and social degeneracy, will not be willing to give them into the hands of unworthy persons who would use the trust for selfish or political ends. Finally, and in a word, when the duties of supervision become properly adjusted, the evolutionary lines of progress will no longer lie in methods of administration merely, but in the development of the powers of the child in the light of an ever-growing sense of his nature, his needs, and the great ends for which he is placed in the world.

* *American political ideas*, p. 6.

The Supervision of Rural Schools

APPENDIX B.

The difficulties in the way of carrying out in rural districts the principles of administration as defined in preceding pages will be readily acknowledged. In fact up to a comparatively recent period, few attempts have been made to do more in the way of supervision than to make provision for the necessary beginning and continuance of the schools.

Difficulties of
of school super-
vision in rural
districts.

It is true that in some of the newer sections of the country efforts were made almost coincident with the establishment of the schools to maintain a certain kind of supervision which was thought to be superior to the non-professional supervision formerly exercised by school committees in the country towns of New England. But it must be admitted that the results of these efforts have been very meagre.

County supervision in most states does little beyond preventing the employment of grossly incompetent teachers and the maintenance of a certain low standard of work in the merely formal subjects. In some places it is difficult to see, from the character of the organization, how even these ends can be accomplished. The inadequacy of salary offered to superintendents, the wide extent of country over which they have to pass in their visits to the schools, the amount of non-professional duties put upon them, all conspire to prevent the adoption of that system of skilled supervision which is found easy to organize in cities and large towns.

County super-
vision in-
adequate.

In general it must be said that changes of school

Changes to be gradual and agree with existing political organization.

organization should be effected gradually and agree in spirit at least with the existing political organization. It would seem necessary, however, for some radical changes of organization to be made before skilled supervision can be introduced into those portions of the country where the political unit is the county.

Plan of supervision in Richmond Co., Georgia.

Some helpful experiments have been made in a few counties of the south in attempts to overcome the difficulties in the way of securing skilled supervision. One of the most hopeful of these experiments was tried several years ago in the county of Richmond, Georgia, and the plan there followed has been adopted in several places. A summary of this plan as given by Superintendent Lawton B. Evans in the *Educational Review** is as follows:

School tax levied and collected by county board.

"One board of education, composed of representatives elected by the people for a term of three years, one-third of the membership expiring every year, has charge of the entire school interests of the city of Augusta and of the county of Richmond. This board of education has the unique power of levying a school tax directly upon the people of the county, without revision by any other authority and without any limit as to rate or amount. The school tax is levied and collected as a uniform rate upon all property of the county, whether it is in the city or out of it. This forms the general school fund of the county, supplemented by the state appropriation.

School fund distributed according to the needs of each ward and district.

"When it comes to the distribution of this fund no regard is paid to the amount raised by any ward of the city or any district of the county, but the fund is distributed according to the necessities of each ward and district, determined by the number of children

*Volume ii, page 371-373.

to be educated. The school fund of the whole county is raised by a tax on all the property of the county and is distributed upon the basis of the school population of each community. Thus it happens that a community rich in naught else but children will get a flourishing school paid for by its wealthier but less fortunate neighbors.

“As a matter of fact, a large part of the money paid by the city is annually spent in the rural districts, for the city has nine-tenths of the taxable property, but only three-fourths of the school population. So it happens that the rural schools pay one-tenth of the school tax and receive the benefit of one-fourth of it. Augusta has spent in the past twenty years the sum of \$200,000 in building school-houses and paying school teachers for the children who live in the country districts around her. Augusta has shown her faith in the proposition that every city needs to be environed by an intelligent, industrious, and contented population.

Rural schools given a fair share of money.

“When it comes to the teachers the same qualifications are demanded for rural schools as for city schools. Upon the regular examination terms, and upon issuing of licenses to teach, an applicant does not know whether he will teach in the city or out of it, and to many it is a matter of indifference. And I know whereof I speak when I say that there are young women graduates of normal colleges doing high-grade work in country schools ten miles beyond the limits of the city, and doing it happily and cheerfully. We believe firmly in the further proposition that a country school is entitled to as good a teacher as a city school, and that those who live in the fields are as deserving of education as those who dwell beside the asphalt. Carlyle must have

The same standard of qualifications for city or rural schools.

had a country child in his mind when he said: 'This I consider a great tragedy: that one soul should remain in ignorance that had capacity for higher things.'

Salaries of rural and city teachers to be the same.

"The teachers are treated as nearly alike as can be. City and country teachers are paid about the same salary. They get it at the end of every month and on the same day. The certainty and the regularity of a fixed compensation create a sense of security, safety, and comfort for a teacher, and accordingly increase his efficiency. No teacher can do his best work when he works at starvation rates, is paid once every three or four months, and often in script that he must discount. There is much philosophy and also economy in the maxim that advises us to pay a public servant well and watch him closely. So we draw no distinction of locality. First-class work is worth as much twenty miles from town as it is in the heart of the city.

A nine months school year for all schools.

"The schools of the county all run nine calendar months. They all begin at the same time and close at the same time. During the last year every child of the county, regardless of where he lived, was offered nine months of actual tuition.

School houses.

"So far as schoolhouses are concerned, these are located in rural districts so as to be on an average of four miles apart. No child is out of walking distance of a school open nine months in the year and taught by a good teacher. These houses are owned by the board of education and cost from \$300 to \$2,500 each, according to size and equipment.

Supervision alike for rural and city schools.

"One superintendent has charge of all the teachers in the county. The same degree of efficiency that should attend the supervision of city schools is likewise extended to the country schools. An expert

teacher for all is the theory, and, so far as human effort can avail, it is carried out in practice. The same course of study is prescribed for the pupils, and the same course of professional reading is required of the teachers. The teachers of the city schools meet for instruction once a week, the teachers of the country schools meet once a month, and in addition have a two-months' institute in the summer months."

In parts of the country where the town or township is the unit of government a different plan will have to be pursued. Here the unit of school administration must be smaller than the county but the ends desired may be accomplished by combining several towns for purposes of supervision, the administration of the schools in all other respects remaining as they are. This has been done effectually in some of the New England states.

The plan is found in greatest efficiency in Massachusetts where it originated in 1888. By this law as amended at various times the school committees of two or more towns, each having a valuation of less than $2\frac{1}{2}$ millions, must form a union for the purpose of employing a superintendent of schools. The union district must consist of two or more towns having in the aggregate not more than 50 schools and not less than 25. If the union district consists of more than three towns the minimum limit of 25 schools need not be adhered to.

The union thus formed cannot be dissolved for three years after the date of its formation except by a vote of the majority of the towns constituting the union; nor can it be dissolved for the reason that the valuation of any one of the towns shall have so increased as to exceed $2\frac{1}{2}$ millions, nor for the

Plan of supervision when the unit of government is the town or township.

The union district plan of supervision in Massachusetts.

Condition of maintaining a union district for supervision.

reason that the number of schools shall have increased beyond 50, or in a union of less than four towns, shall have decreased below 25.

The school committees in joint convention to choose the superintendent.

The school committees of the towns forming a union must meet in a joint convention to choose a superintendent of schools, determine the relative amount of service to be performed by him in each town, fix his salary, apportion the amount thereof to be paid by the several towns and certify it to each town treasurer.

For all other purposes the school committee are the agents of each town of the union district, that is, the school committee of any given town determine the duties of the superintendent for that town.

Payment of superintendent's salary by state and towns.

At the close of each year when the fact is certified to that the towns constituting a union, in addition to an amount equal to the average amount paid for schools during the preceding three years, have raised by taxation not less than \$750 for the support of a superintendent of schools and that a superintendent has been employed for one year, the towns receive from the state \$1,250, three-fifths of which is paid for the salary of the superintendent and the other two-fifths to the towns for the salaries of teachers.

The state board authorized to form and readjust districts.

The law also provides that smaller towns may unite with a city or large town to form a union, but in that case the smaller towns only receive money from the state on account of being in a union.

The State Board of Education is authorized to form and readjust unions of towns whenever in its judgment it becomes imperatively necessary to include a town which is otherwise unable to comply with the law.

Thus it is that over two hundred towns of the

Commonwealth are under skilled supervision in union districts, while every other town is obliged either alone or in conjunction with one or more towns to employ a superintendent. As the minimum salary of the union superintendent is \$1,500 and as the position is a favorable one for promotion, good service as a rule is secured, and through its means the schools of the towns of low valuation have been greatly improved. This will be even more manifest when the towns get the increased aid promised them from the state.

Over 200 towns under skilled supervision.

Consolidation of Rural Schools *

APPENDIX C.

Conveyance of pupils authorized by law in Massachusetts.

In 1869 the legislature of Massachusetts passed a law authorizing towns to raise and appropriate money for the conveyance of pupils to and from the public schools. At the same session in which this law was passed, it was voted for a second time to abolish the district system. There may be no connection between these two events, but behind them both was a spirit of unrest. The people of the country towns had at last come to realize that a too close adherence to the principle of local self-government in education was working an injury to the smaller towns, and that the remedy lay in adopting a policy by which the town at large would share the obligations and privileges of school control. The rapid depopulation of country towns and the increasing inability of these towns to support their schools, helped to encourage the movement of consolidating the schools, and thereby of making the rural schools to share in some degree the privileges of a graded system.

Extent and growth of school consolidation.

There is no record available to show how much the rural schools were immediately affected by the passage of the transportation law just referred to. We only know that within twenty years after the law was passed, upwards of two hundred towns had to

* A paper read before the Department of School Administration of the National Educational Association in Boston, July 8, 1903.

a greater or less degree availed themselves of the provisions of the law and were spending in the aggregate more than \$20,000 annually for the conveyance of pupils. From that time to the present the idea of consolidating the schools has been constantly kept in mind by the people, as shown by the increased amount appropriated each year for the transportation of pupils. The total expenditure for this purpose in 1901 was \$165,596, which exceeded the expenditure of the previous year by \$13,823, showing that the conveyance of pupils to and from school at public expense is still going on. The extent of the practice is shown by the fact that only 59 of the 353 towns and cities of the Commonwealth reported no expenditures for the conveyance of pupils last year, and that a good proportion of these 59 towns neither have rural schools nor are likely to have them. It should be said that not all the money reported as appropriated for the conveyance of pupils, was expended for carrying pupils from closed schools; but the sum expended for any other purpose is comparatively small and therefore the amounts given are an approximate measure of the extent to which the schools have been brought together.

No statistics have been gathered as to the exact number of rural schools which have been consolidated thus far, but a careful estimate indicates that at least 10% of the so-called ungraded schools have been discontinued and that the pupils of the discontinued schools are being carried at public expense either to central graded schools or to other ungraded schools.

There is yet another way of ascertaining the strength of the present movement in the consolida-

Ten per cent.
of rural schools
discontinued.

Growth of sentiment in favor of school consolidation.

tion of rural schools, and that is through the testimony of persons who have tried the plan or who have seen the effects of a fair trial of it. In a special inquiry made a few years ago by an agent of the Massachusetts State Board of Education, the fact was brought out that in a large majority of the places where the experiment of consolidation had been tried there was a pronounced sentiment in favor of its continuance. Several reasons were given for this opinion, among which were increase in the regularity and punctuality of pupils, an improved character of school buildings and equipment, enhanced interest on the part of pupils and a reduction in the cost of school maintenance. The inquiry brought out another fact, although it was an incidental one, and that was the evident need of making the educational conditions in the State at large more nearly equal, a need which has been recently met in part at least by a substantial increase of the State grant to the more needy towns of the Commonwealth.

In view of all these facts, it is fair to conclude that in Massachusetts at least the plan of the consolidation of rural schools is no longer an experiment, but is recognized in most of the towns of the Commonwealth as a helpful means of raising the standard of education in rural communities.

Plans of consolidation adopted in various states.

What is true of Massachusetts is doubtless true of several of the twenty states which are reported as having adopted in one form or another the plan of consolidation. In Iowa the plan which has been in operation for some time is favored by 95% of the County Superintendents and by the State Superintendent. In Connecticut the law permitting the closing of schools and transportation of pupils as

reported by the State Superintendent "has been immensely advantageous to the State." In Ohio the State Commissioner is loud in his commendation of the plan which has been in operation several years. In Vermont over 700 schools were closed in a single year and the amount expended for the conveyance of pupils more than doubled in six years. In New Hampshire the advantages enumerated in favor of discontinuing small schools and conveying the pupils are (1) economy; (2) better teachers and equipment; (3) better supervision; (4) regularity of pupils' attendance, and (5) a better educational spirit.

Commissioner Harris in his last report, in speaking of the consolidation of rural schools,* says: "Upon the success of this movement rests the chief hope for the improvement of the rural school. It is fortunate that a device which changes the ungraded school into a graded school involves a saving of expense. The improvement is well worth trial, even were it to double the cost of the rural school, but as will be seen by statistics it is secured with an actual saving of expenditure. Better teachers, more sanitary buildings, less personal exposure on the part of pupils, better classification, and many lesser advantages are commending this reform over the country."

Views of Commissioner Harris.

Added to the advantages enumerated above may be mentioned the improved facilities for breadth and fineness of social culture. Life in many rural communities is circumscribed by unavoidable limitations which may in part be overcome by extending the associations of the children and so enriching their lives. The dangers, of course, of a too great extension of associations must be recognized, but it

Consideration of social culture.

is assumed that in any plan of union, the conditions of contact will be carefully guarded in the interests of all. Experience has shown, however, that the dangers of certain kinds of contamination are far greater in small country schools than in larger graded schools, where there is protection in numbers.

Various features of consolidation.

Being assured of the possibilities for good in the consolidation of rural schools, we have next to inquire how best it may be accomplished. Shall the local school board as in Massachusetts, Ohio and New Jersey, be given full authority to consolidate the schools and to transport the pupils, or shall it be subject to certain legal restrictions, such for example as exist in Indiana, where the trustees of a school district may act only upon petition of a majority of the voters, or as in New Hampshire where only a certain percentage of the school money may be expended for the conveyance of pupils, or as in Rhode Island where schools only may be closed that have an average membership of less than twelve, or as in Iowa where the boards are limited in their appropriation for transportation to five dollars for each person of school age? Shall the law governing the transportation of pupils designate the minimum distance at which pupils may be carried to school as in Vermont and Kansas? Or shall the township or district be allowed, as in some states, to offer a mileage to pupils living at a distance from the school as an alternative to free transportation.

Why extended legislation is not desirable.

However meritorious some of these features of consolidation may be in themselves considered, it is a matter of grave doubt whether they should be made subjects of legislation even upon the basis of suggestion or permission. The conditions of a single state, even of the smallest state, are so varied that

no general policy or line of action can be defined by law, without doing a possible injury in special localities. Take for example the designation by law of the minimum distance at which pupils may be conveyed to school. Everyone knows that what is a proper distance for pupils to walk to school under some conditions is quite too great under others. The circumstances of companionship, of the character of the roadway and of the age and sex of the pupils all help to determine what the maximum walking distance for the pupils should be. The designation of two miles as a minimum distance for free transportation of pupils, as in Kansas, would work a severe hardship in the case of young girls who might be obliged under the law to walk a mile or a mile and a half over a lonely road, while on the other hand the offer of free rides for all pupils living over three-fourths of a mile from the school, as in Ohio and Pennsylvania, might have in certain districts a somewhat demoralizing influence upon healthy boys of twelve or fifteen years of age.

Again the designation of a minimum sum, as in Iowa, for the transportation of each pupil, must work an injury in certain cases, quite as much when the sum named is too great as when it is too small. In the one case there would be the temptation to extravagance and excess; in the other, there might be discomfort and neglect.

The danger is especially manifest when school boards find it necessary to strike a bargain with the carriers. The smallness of the amount, which the driver or proprietor of a school carriage is sometimes forced to accept, is an indication of the possible meagreness of service rendered in the form of unfit carriages and poor oversight. Such bargain-

The designation of a fixed sum for transportation not desirable.

ing and results are a reminder of the old time practice of auctioning off the teacher's board to the lowest bidder.

But perhaps the saddest results of sharp bargaining come from the practice followed in some places of paying a small sum for each pupil or family living at a distance from the school, with the understanding that the father may or may not perform the service of transportation for which he is paid. In too many cases it is feared the children are forced by the parsimony of the father to endure much hardship and perhaps loss of school privileges—a result of small moment compared to the pauperizing influence of the transaction upon all concerned.

Decision in
New York.

Few specifica-
tions in the
law should be
made.

These are some of the conditions of the consolidation of schools which the state may well avoid, at least by any specification of statute requirement. There may be others equally objectionable. The point that I would urge is that few specifications of organization should be made in the law providing for the consolidation beyond the giving of large and responsible duties to local boards.

Shall consolida-
tion be univer-
sal and obliga-
tory?

Among the first questions to decide in considering a possible scheme of legislation in relation to the consolidation of schools is whether it is best to make the plan universal and obligatory. While it must be admitted that great good has been accomplished in the past by the closing of small schools and the transportation of the pupils to other schools, and while the testimony seems to favor an extension of such a plan, it may well be questioned whether it is desirable for all the rural schools, even for all the small rural schools, to be consolidated.

In this age of reform we must not insist upon

making the number of schools fewer only for the purpose of making the number of pupils in each school larger or of decreasing the expense of school maintenance. The truth is, our schools will be more rather than less expensive in the future and they will also be smaller rather than larger. While we are urging that our graded schools of forty and fifty pupils must be reduced to twenty and thirty that better individual work may be done, we can hardly agree with some superintendents in the assumption that the country ungraded schools of fifteen and twenty, or even ten pupils, are too small, or that on account of their size alone they should be closed. And when we get over the notion that a plan is good because it is cheap, we shall not make so much of the argument of economy. The only or chief determining factor of any plan of organization is efficiency. Judged by that standard a school of twelve or fifteen pupils who are under twelve years of age and who live within a mile of the school, may possibly do better service for the children than could be done under some conditions of consolidation.

Danger of making the schools too large.

Efficiency the determining factor.

In such a comparison of conditions, it must be understood that the teachers in both classes of schools are equally good. One weak point in our comparison of ungraded and graded schools has been that we have had in mind a teacher for one class of schools who is dear at six dollars a week, and a teacher for the other class who is cheap at six hundred a year. The test of our argument in favor of transportation will appear when we think of the six-dollar teacher in the central school, or better when we think of the six-hundred-dollar teacher in the small isolated one.

Teachers of graded and ungraded schools should be equally good.

No general
rule or law for
any state.

Be it remembered, I am not now arguing in favor of the ungraded over the graded school, much less am I urging the wisdom of keeping the rural schools as they are. I am trying only to show that the principle of consolidation should not be applied to all ungraded schools and that therefore no general law should be passed by any state enforcing its adoption. The most that I would urge is the passage of a law permitting schools to be closed and the pupils conveyed at public expense whenever, in the estimation of the township or county board, it is desirable to do so. I would put few restrictions upon the action of this board, believing that an elective body to which is given large powers will act wisely in the interests of the people.

Large discretionary
powers for
local boards.

In the law authorizing boards to carry pupils to and from school, the provision may be made that all precautions shall be taken to protect the pupils from harm or injury of any kind. It might be well also to give all persons who have a grievance of any kind the right of appeal to the State Board of Education. In placing so much power and latitude of action in the hands of the township or county boards, the assumption is that there are no small district boards, or if there are such boards that they will be abolished. If the state is not yet ready to abolish the district system and must for a time endure its blighting effects, the better course perhaps is for each district or district board to arrange for the transportation of the pupils in case the school is closed, each board to retain its organization.

With few requirements and restrictions beyond what I have named, and with ample means at its command, the local school board will have the opportunity of generously meeting the educational needs

and wants of the more sparsely settled sections. It will recognize the limited social and educational opportunities of the children of these sections and will do all in its power to overcome those limitations by providing the best service and the most ample accommodations possible.

Whenever it is seen to be best for the social and educational well-being of the children of a neighborhood to close a school, the safest and most convenient arrangements for the conveyance of the pupils should be made. As far as possible the plan should be followed of taking the children from their homes to the central school. The vehicle provided for the conveyance of the children should be safe and comfortable and the driver should be carefully selected. So important is the matter of a proper care and oversight of the children in transit, that the entire project of consolidation and conveyance ought to depend upon whether a suitable person may be found for the service. Provision should be made for caring for the pupils during the noon intermission, a precaution by the way which should be taken in any school where the pupils remain at noon.

Ways and means of the conveyance of children.

In some neighborhoods and towns it may seem wise to apply the principle of consolidation only to the older pupils, the younger pupils being left in small ungraded schools. In such cases the possible increase of expense attending the transportation of pupils should not stand in the way of efficiently meeting the needs of the pupils.

What has been said thus far applies especially to the elementary schools. The practice of consolidation may be quite wisely followed in high schools. Whenever circumstances seem to make it desirable

Consolidation of small high schools.

or feasible to close the small high schools of two or more towns, and to provide for the transportation of pupils to a strong central school, it should be done. This may be done by placing the management of the central school in the hands of one or more representatives of each local board, each board to provide for the transportation of its own pupils.

It is hoped that the following points have been made clear:

1. That the advantages attending the consolidation of rural schools have been shown by experience to be so great that the plan should be extended to all communities where it can be conveniently carried out.

Summary of
conclusions.

2. That the consolidation of schools should not be uniform or compulsory throughout all sections of a state, but depend upon local needs and conditions.

3. That in the law providing for the consolidation of rural schools few specifications of organization should be made, beyond the giving of large and responsible duties to local boards.

4. That in any plan of consolidation, especial attention should be given to arrangements which will insure the greatest degree of convenience, safety and freedom from contamination.

School Revenues and their Distribution

APPENDIX D

Nearly all of the states have permanent funds from which an income is derived for the partial support of the schools. This sum varies greatly, being less than 2% of the total amount expended in Massachusetts and nearly 30% in Texas.

The balance of the sum expended is raised mostly by taxation, either state or local. Here again there are great differences. In some of the states nearly the whole amount expended for schools is raised by state tax, while in others upwards of 90% is raised by local tax. A comparison of statistics shows that the increase in the income from local taxes in the United States is relatively far greater than the increase in the income from a state tax. For the 21 years ending 1900-1901 the increase in state revenues for the support of schools was about 46%, while the local taxes for the same purpose had increased about 65%.

Differences of financial conditions in the various states.

It is of course impossible to establish a uniform and equitable ratio of the state tax to the local tax, yet it is safe to say that in some states that ratio is far too great while in others it is too small. The following extracts from the Report of the Committee of Twelve appointed by the National Educational Association bear upon this and other points of in-

Report of the committee of twelve upon school revenues and their distribution.

terest connected with school revenues and their distribution.

REVENUE

Manifestly such areas or units of taxation should be created, or continued if already in existence, as will fully develop the sound American principle, that *the whole wealth of the state shall be made available for educating all the youth of the state*. This is both right and necessary, for it must be remembered that, in the United States, education is a civil, or state, function, to be supported like other similar functions. What shall these units of taxation be? The subcommittee names those following as coming under the principle just stated:

Units of taxation.

State aid necessary.

1. *The State*.—A liberal provision of funds from the state treasury, to be distributed according to some rational method, is indispensable, as a rule, to the maintenance of a good system of state schools. Formerly the burden was mainly or wholly thrown upon the local units. The old Massachusetts plan was to throw upon the towns the whole burden of maintaining their own schools. But the greatly increased cost of schools, growing out of enhanced salaries, longer terms, and improved material equipment, long ago demonstrated that this plan must be materially modified. Many local taxing units are too poor to carry such a load, and they must either abandon all hope of good schools or they must receive assistance from the state or social whole.

* * * * *

2. In all states, where, for other local purposes, the county is the sole unit of taxation, a liberal county tax should be levied for the schools. This proposition applies especially to those states where the county system of local government prevails.

In states where, for such purposes, the county is a large unit of taxation, it may be wise to levy a county school tax; that circumstances must determine. This remark applies to the states having the mixed system of local government. Under the town system county taxation for schools would be out of harmony with the social and political traditions of the people, and could be accomplished only through a change of habit; perhaps this end is attainable. For the year 1894-95 the Commissioner of Education shows that 67% of the total school revenues of the country came from local taxes. The scale ran from 1.7 per cent. in North Carolina to 98² % in Massachusetts. Unfortunately we have no statistics showing from what sources the local taxes come; how much from districts, towns, and counties respectively. The point must, however, be strongly pressed that local supply for public education should be forthcoming as well as state supply. It is a great mistake to teach the people to look altogether, or mainly, to the state treasury for school maintenance. They should rather be taught to depend in due measure upon themselves. It is the confident opinion of the subcommittee that some states are now committing this mistake. Many states having the county system of local government have in the counties a resource for school maintenance upon which they have never adequately drawn.

A county school tax advisable for some states.

3. In those states where the town or township is a large taxing unit for other local purposes, it should also be made to contribute liberally to public education. This recommendation it would be idle to urge in most of the southern and in some of the western states, because the civil town or township does not exist, and it would be vain to urge its

The desirability of local taxation for schools.

creation for school purposes exclusively. But in those states where the town and mixed systems of local government exist, a township school tax would be congruous with the general social and political habits of the people. The desirability of local taxation for school purposes was urged under the last head. Such taxation develops self-reliance and local character, and tends to awaken and keep alive the interest of the people in the schools. The town was the sole school-taxing unit in old New England, and it is still a prominent, sometimes almost an exclusive, one throughout the northern states. The local school taxes of New England are town and district taxes, and, taken together, they range from the minimum of 69.2 per cent. of the whole in Maine to 98.2 in Massachusetts. It can hardly be doubted that the New England states, as well as some others, now throw the burden too heavily upon the towns and districts, and that they will find it advantageous considerably to raise the ratio which state taxation bears to local taxation. The other New England states will probably follow, sooner or later, the example of Maine, which raises nearly one-third of her school money by state taxation. In some states, no doubt, the townships should carry a heavier weight than at present, at least as compared with districts; at all events, the township should bear a reasonable part of the cost of its own education.

DISTRIBUTION

Help to be
given to those
communities
which help
themselves.

1. The assistance that the large political and social units render to the small ones, as the state to counties, townships, and districts; or the county to townships and districts; or the township to districts, should be made contingent, in part at least,

upon what the small units do for themselves. No community, it is believed, is so poor that it cannot do something towards educating its youth. Again, a state educational system should be so organized and administered as to stimulate, and not repress, local spirit and effort. It is a great mistake to remove the burdens of public education so far from the people that they forget, or tend to forget, their existence. The principle here involved is a vital one. History shows conclusively that popular education has flourished most in those states of our Union where government is most democratic.

It is difficult, or rather impossible, to lay down a general rule that shall govern the division of taxation between the state and the local communities. Two things are to be considered. One is the political institutions that exist in the state. If government is largely centralized at state capitals and county seats—*that* is one thing; if it is largely decentralized, as where the principle of local self-government is fully developed—*that* is quite another. For example, it would be idle to expect that the same results would obtain in the southern states that are found in New England, or even in that great group of states where the mixed system of local government prevails. The governmental machinery and the traditions of the people *will* assert themselves in such matters. The other factors to be considered are social, and particularly economical conditions.

* * * * *

2. Funds raised by the large taxing units should be distributed in such a manner as to bring the support of the rich and strong to the poor and weak. The only reason for taxing these units at all for general purposes is to secure this end. On no other

No general rule for the division of taxation

The rich and strong to help the poor and weak.

principle can a state school tax, or even a county or township tax, be defended, unless indeed the county or township is a single district. The practical question is, How shall such funds be distributed so as not to defeat the end in view?

* * * * *

Objection to distribution according to school census.

(1) Distribution according to the school census or enumeration is open to a serious objection, *viz.*, it does not carry the money where it is most needed. For example, two districts lie side by side, one having twenty and the other forty youths of school age; the second district draws twice as much money as the other, but the cost of keeping up the two schools is practically the same. The same would be true of two township units, unless the schools were consolidated. The result is that the district or township that needs the most help receives the least. The rule is simple and easily worked, but it tends partially to defeat the end of state or county aid.

Distribution according to enrollment not advisable.

(2) The same objection holds against rules based on the school enrollment or on attendance, only with somewhat diminished force. Again, if the enrollment is followed, or attendance for a brief time, there is danger that some children will go to school long enough to be counted, and then drop out. Besides, such rules of distribution work in favor of the graded schools and against the rural schools, on account of their larger enrollment and more regular attendance.

A fixed sum based upon an arbitrary unit or units the most equitable.

(3) Taking everything into account, the subcommittee is inclined to think that a fixed sum or sums, based on an arbitrary unit or units, is most equitable. Examples of such rules are furnished by the states of Massachusetts, Rhode Island, New York, New

Jersey, and California. The most serious objection to such rules is that they are necessarily complicated; some of those given above are quite complicated. Then, if the fixed sum is so much a teacher, as in New York, or so much a district, as in Rhode Island and New Jersey, there is a temptation to the undue multiplication of schools or teachers. But this point can be safeguarded by fixing statutory limitations, as in California. No rule can be devised that will not be open to objection. The subcommittee does not believe it possible to invent any rule of distribution that will well accomplish the purpose of taxing large units for the benefit of small ones, unless it rests on the school or the teacher as a unit, with the necessary qualifications. The Massachusetts rule is open to the objection that the school needs of towns cannot always be measured by low valuations of property assessed for taxation, as the number of pupils to be educated is also a factor. If the method of distribution now recommended is objected to as an exclusive one, then it may be supplemented by basing a part of the appropriation on the school census, enrollment, or attendance. The resort to the United States census is most objectionable, as great changes of population occur in the course of ten years.

Various objections considered.

Special Schools and Classes

APPENDIX E.

If, as is generally done, the state assumes the duty of caring for extreme cases of the defective classes such as the blind, deaf, and feeble-minded there will be left a large number of defectives of a milder form whose education ought to be carried on by the community in which the defectives live.*

SPECIAL SCHOOLS FOR THE MENTALLY WEAK

Within the past twenty years much attention has been given in this country and abroad to the care of children who are mentally weak but not idiotic. The formation of special classes for this class of children is made not only for the benefit of the weak-minded or mentally slow pupils but for the relief of the ordinary schools. In Prussia there were in 1896, 27 cities maintaining 38 schools for this class of children. Such schools are an integral part of the public school system and are reported in the public school statistics of attendance.

Schools for the mentally weak in Prussia and various American cities.

In the United States several cities, including Providence, Boston, Philadelphia, and Washington, have made a good beginning in the maintenance of schools for this class of children. The following extracts from reports give some interesting facts:

[*Providence, R. I.* Extract from a report of Mrs. Rhoda L. Esten, Supervisor of Special Schools.]

The first school for backward children in Prov-

* For a treatment of the subject of "Schools for Defectives and Delinquents" see Chapter xi, page 220.

idence, R. I., was opened December, 1896; a second, December, 1897, and a third December, 1898. From the organization of these schools to June 29, 1900, was a period varying from nearly four years to a year and five months. During this period 82 different pupils have been enrolled, and of this number 13 have been transferred to other schools, 16 have left to work, being beyond school age, 3 have moved out of the city, 2 left, cause unknown, 1 left, unimprovable, 1 has died, 1 has gone to a parochial school, and 45 remain under special instruction.

Report of
schools for
backward
children in
Providence,
R. I.

The principles and methods obtaining in these schools have been as follows: As physical development must precede mental with these children, daily exercises have been given tending to train their muscular systems to a regular and ready response to commands given by the teacher, the object of this drill being to strengthen the muscles and improve their co-ordination. Other exercises have been given that required judgment and choice on the part of the pupils, simple at first but gradually increasing in difficulty as the pupils were able to receive them. Care has been taken to find out their likes and dislikes and so to arrange the work that each subject presented should, as much as possible, bear on something in which they were interested, thus encouraging expression on their part. Simple stories relating to dear and familiar objects, or events in real life, illustrated, if possible, by the teacher, have been told them, at first following them simply to listen; afterwards talks were given upon these stories, and by skillful questioning the pupils were led to see the beautiful pictures or thoughts contained in the story, or the good or evil as the case

might be, and to give expression to their wishes and desires.

The above training carried on patiently and persistently has been followed, except in a few cases, by a perceptible growth in their physical and mental powers. In connection with the above has been given the instruction of the school, consisting of a modified course of kindergarten and primary work. Care has been taken to present each step or principle in a clear, simple and interesting way, appealing to as many senses as possible, also to avoid taking the second step until the first has been firmly fixed in the minds of the pupils.

These pupils advance very slowly and can bridge no gaps in instruction, hence patient, persistent and sympathetic teachers are necessary. It has been encouraging and gratifying to note that, with five exceptions (one a case of paralysis, one of epilepsy, two too old to be improvable, and one too low grade), all have made some improvement, and, in many cases, improvement in a marked degree. Five have been returned to the regular schools and are now doing regular work; seven, able to do the grade work, have been transferred to the schools for special discipline and instruction, as, on account of some peculiarity of disposition, they could be better cared for in these schools than in the regular schools; sixteen are earning their living, wholly or in part, being over fifteen years of age. Some have shown special aptitudes, which, owing to a lack of proper accommodation and facilities in these schools, we have been unable to cultivate as a means of support.

The discipline of these schools has been of a parental character. The more capable of the pupils

have been helpful in caring for the less, and a harmonious spirit has prevailed.

Although much has been done for these children, yet, with better schoolroom accommodations, with better facilities for physical and manual training, and with teachers experienced in this work, better and more far-reaching results could be obtained.

EDUCATIONAL CENTRES

In various cities there has been an extended use of the school buildings in so called "Educational Centres." These are really a kind of evening school, differing from that school only in the fact that its exercises are of a practical nature. The character of these "centres" may be judged from the following extract from a report made by the Committee on extended use of school buildings in Boston when five centres were in operation during the winter of 1903-1904. The report refers to the first term of one of the centres:

"The Centre began with a registration of 810. From the first night until the school closed the registration was constantly gaining, until at the end of the twelve weeks' term it had reached 4,384.

Report of educational centres in Boston.

"The week was divided into two parts, one set of people coming Tuesdays and Thursdays, and the other Mondays, Wednesdays, and Fridays. In this way the opening registration of 810 gave a maximum possible attendance of 405 each night, except perhaps for a few who came every evening for the sake of taking two courses.

"Within a few weeks after opening, the building was filled to the limit of its capacity, there being present a thousand members each evening, this, under the dual system of classes, meaning that two

thousand people of the neighborhood were attending the Centre every week.

"The Centre began with a single class in dress-making, but the facilities had to be increased immediately, and toward the close four separate dress-making classes were maintained, the rooms being crowded every evening. In fact, it has not been an unusual thing to go into one of the dressmaking rooms and find the seating capacity of fifty-six exhausted, so that some of the members of the class were standing.

"In like manner, it was necessary to increase the instruction in millinery until at the end there were four classes.

"The same increase was noted in the class in embroidery.

"In cookery, the number given instruction was only limited by the capacity of the school kitchen. One night a week this room was devoted to a large and enthusiastic class of married women.

"A successful class in bookkeeping for men and women was conducted.

"For the first time, at least in the history of our Boston schools, except for the class started a short time previously in the Lowell Centre, classes intended expressly to fit for civil service examinations were opened. These proved very successful and popular, and were joined by some two hundred men.

"In stenography there were two elementary classes and one speed class, composed almost entirely of young men and women working in commercial establishments during the day.

"Four carpentry classes for men were conducted in the two manual training rooms. Two of these

classes were for beginners and two for advanced pupils.

"A successful class in mechanical drawing and drafting, made up of men drawn from a variety of trades, met three times a week."

Several additional features were included in the work of the following season, such as steam engineering conducted by the superintendent of the steam-engineering department of the Institute of Technology; a reading room furnished by the aid of the Boston Public Library; study rooms for the pupils of the two upper grades of the grammar schools of the district; a gymnasium for classes of young men and women; lectures upon literature, geology and civil government.

Of the general success of these Centres the committee above referred to says:

"One of the characteristics of these Educational Centres which has been most remarked upon by many of the hundreds of visitors since they were opened is the general atmosphere of friendliness which pervades all the rooms. The people of the neighborhood seem to realize that not only are the intellectual advantages of the school at their disposal, but beyond this there is a warm and friendly welcome awaiting each person who enters the building. In the rooms where conversation is possible, such as the dressmaking and millinery rooms, for example, the members of the class carry on a neighborly chat with each other whenever the teacher is not addressing the class as a whole. It is pleasant, when the closing hour comes, to see the members of the school reluctant to leave the building, lingering about the rooms and halls conversing with each other. Not only has this atmosphere been com-

mented upon repeatedly by visitors, but the same thing has been indicated in many other ways. One young woman recently made the remark to the principal of one of the Centres that she had been living in the locality more than a year, supporting herself by working in the city during the daytime and living by herself in a small room, and up to the time the Centre opened she had been leading a lonely life without a friend, but as a result of attending one of the millinery classes at the Centre she now had many good friends. Numberless other interesting incidents connected with the work of the Centres might be related if there were space. For instance, the principal at one of the Centres found that two of the young women who had attended his dressmaking class were married in dresses which they had learned to make, and in fact had made, at the Centre. It is interesting to note that these young ladies also took the course in cooking. The resident physicians, clergymen, and others having occasion to be familiar with the lives of the people have repeatedly spoken of the good effect which they saw resulting from the establishment of a Centre in their locality."

VACATION SCHOOLS

Popularity of
vacation
schools.

Probably no feature of educational work has met with a more surprising response on the part of the people than the vacation school. When it was first alluded to as a possibility, many doubted the wisdom of even offering it, while all supposed that as attendance upon it must be voluntary its benefits would be shared by but few. But in the opening of every vacation school whose programme consisted largely of industrial and physical exercises, the response has been greater than was expected. In

some cases there was an actual waiting list. Thus vacation schools of various sizes and kinds have been maintained for several seasons in Chicago, New York, Boston, Hartford, Providence and many other places.

The following lines have been followed with varying degrees of emphasis in the various vacation schools:

1. Manual or industrial training, including work in wood, raffia, cane, and metal; sewing, hammock making, cooking, gardening, etc. Kinds of work done in vacation schools.
2. Nature study, including the naming of the common plants and trees.
3. Drawing and painting, including mechanical and free hand exercises, study of pictures, etc.
4. Physical exercises, including gymnastics, games, and plays.
5. Music.
6. Excursions.
7. Kindergarten exercises.
8. Common branches.

School Hygiene *

APPENDIX F.

[The greater portion of these notes are taken from the author's special report made to the Massachusetts State Board of Education in 1901.]

Two classes of hygienic conditions.

Hygienic Conditions. The hygienic conditions of schools may be separated into two classes, one class consisting of those for which the public authorities are responsible, and the other class consisting of those for which the parents or pupils are responsible. Among the former class of conditions are: (1) the location of buildings, (2) construction and plan of buildings, (3) school equipment, (4) composition and adjustment of the school programme. The conditions for which the parents or pupils are responsible are those which relate to (1) home requirements, (2) social diversions, (3) food and rest, (4) personal habits of pupils. These conditions will be treated briefly in order.

Location of School Buildings. The ground upon which the schoolhouse is placed should be high, and

*The figures in parentheses refer to the numbered titles of reference books and articles which are printed at the close of this report. For a more full bibliography of the subjects connected with school hygiene, see Kotelmann's *School Hygiene*, pp. 353-382; also *Journal of Proceedings of the National Educational Association* for 1898, pp. 506-523. The last-named compilation, made by Dr. Burnham, consists of 436 titles of books and articles published in this country and Europe.

the soil gravelly or sandy, so as to allow good drainage and a dry cellar. Clayey soil and soil in which there is refuse or organic matter are to be avoided. The building should not be located near a swamp or standing water, or any place whose odors are offensive. It should be so retired that the school shall not be disturbed by noises from without, and so far removed from the boundaries of the lot upon which it is placed that no building upon an adjoining lot can shut out the light from the schoolrooms. In choosing the lot upon which the building is to be placed, let there be generous provision made for play and exercise grounds, and, if possible, room for shrubs and flowers.

Desirable
features of
location.

Schoolrooms and Corridors. The size of the schoolroom should be determined by considerations of health as well as of convenience. Authorities differ as to the amount of space needed, probably owing to the fact that the amount of fresh air breathed depends less upon the size of the room than upon the way it is ventilated. It is safe, however, to assume that, on account of proper ventilation, a minimum of 16 square feet of floor space and 250 cubic feet of air space per pupil should be required.*

Size of school
rooms.

The pupils' eyesight should also be considered in determining the size of the room. If, as is assumed by some authorities, ordinary writing upon a blackboard cannot be easily read beyond 30 feet, this distance or a little more should be the limit of the length of the room. The width of the room should be limited to the extent at which satisfactory lighting can be had from the windows on the side of the

* These amounts are somewhat larger than the requirements in several European States, as quoted by Dr. Burnham (4, p. 25).

room. This distance has been generally regarded to be 24 feet. For purposes of ventilation and lighting, the room should not be less than 12 feet, and need not be more than 13 or 14 feet high.

Corridors and cloak rooms.

Ample provision should be made for corridors and cloak rooms, placed in such relation to air and sunlight as to provide for good ventilation. Under no consideration should the outer clothing be hung in the schoolroom, as is sometimes the case.

Play and exercise rooms

Every school building should have one or more rooms that can be used for play in cold or stormy weather, and for physical exercises at any time. These rooms should be well ventilated, and, if possible, exposed to the sun a portion of the day. They should be so situated as to be easily accessible from all rooms, and so constructed that noisy exercises shall not disturb the schools when they are in session.

Facilities for washing and bathing.

In the construction of school buildings, provision should always be made for the pupils to wash their faces and hands, and whenever it can be done, facilities for plunge or shower baths should be provided. This is especially important in schools whose pupils have not bathing facilities at home.†

Material and place for blackboards.

The best material for wall blackboards is natural slate. They should be built into the walls at such parts of the room as will be most convenient for use and least harmful to the eyes. As a rule, they should not be placed where the reflection of light is such as to make it difficult for pupils at their seats to see what is written upon them, and in no case should they be placed between windows.

† Baths have been introduced in a number of American and European schools. The reports of their use are very favorable to their continuance. For reports from Germany, see (4, p. 38; 11, p. 470).

THE MOST DIFFICULT PROBLEM

Ventilation and Heating. By far the most important as well as the most difficult problem in the construction of schoolhouses is the method of their ventilation. The problem consists in keeping the air of schoolrooms as nearly as possible in the condition of pure outdoor air, which consists of oxygen and nitrogen in certain proportions, with a small quantity of carbonic acid gas and water. After it has been through the lungs, the air is changed by an increase of about 4 per cent. in volume of carbonic acid gas and by a decrease of about the same quantity of oxygen. There is also found in vitiated air more or less of organic matter and an increased amount of watery vapor. Authorities differ as to the causes of the effects of breathing what is called "bad air," some averring that the organic matter from the skin and lungs is the cause of the deleterious effect, and some that the dangers lie not from the existence of any poison in the respired air, but from an excess of carbonic acid and a deficiency of oxygen. But all agree, for one reason or another, that the amount of carbonic acid in the air is the measure of its impurity.*

Character of
vitiating air.

The relative amount of carbonic acid in the air is ascertained in various ways, the simplest test being made by means of Wolpert's air tester, which consists of a test tube filled with lime water, and a rubber bulb with an attached glass tube for pumping the air to be tested into the lime water. The number of bulbfuls of air used in the test to make the lime

Tests of purity
of air.

* For statements as to the cause of contamination in breathing respired air and for making the amount of carbon dioxide in the air the measure of its impurity, see (1, p. 69; 3, p. 34; 12, p. 124; 27, pp. 18, 23; 20, p. 741).

water opaque, indicates, as shown by the table, the vitiated character of the air. This instrument, at best, can give but an approximate test of the character of the air, but sufficient, it may be, if found very bad, to warrant an accurate analysis or to provide better means of ventilation.†

The quality of air may also be inferentially determined by estimating the amount of fresh air that is forced into or out of a room in a given time. This may be done by means of an anemometer placed in the current. The rate per second or minute multiplied by the number of superficial feet in the opening will give the volume, which may be compared with the amount needed.

Authorities are agreed that air containing 10 parts of carbonic acid to 10,000 is unfit to breathe, and that for healthy respiration air should contain not more than 7 parts of such gas to 10,000. Measured by such a standard, the air of most schoolrooms not provided with modern methods of ventilation would be regarded as bad or very bad.*

The amount of air required for each child varies from 1,800 to 2,500 cubic feet per hour. If there is for each child the amount of space previously indi-

† Sold by Codman & Shurtleff, Boston, Mass. More accurate testers are those of Pettenkoffer and of Smith-Lunge, both of which are fully described by Kotelmann (1, p. 73). The method given by Dr. Cohen is described by Professor Burrage (3, p. 37). Other methods of testing the air are described by Richards and Woodman (27, pp. 33, 35).

* Many tests made of the air in schoolrooms in this country and in Europe show most alarming results. From 20 to 50 parts of carbonic acid gas to 10,000 have been frequently found in schoolrooms, and sometimes the proportion has been found to be 70 and even 90 to 10,000. For a record of these tests, see (4, p. 27; 2, p. 85).

cated (16 square feet of floor space and 250 cubic feet of air space), the air should be changed every 10 or 12 minutes,—that is, each pupil should be provided with at least 30 cubic feet of fresh air per minute.* This amount of air, having a temperature of not less than 60°, may be introduced and distributed by properly located flues without producing dangerous draughts.

Ventilation
needed.

When the outside temperature is above 60° F., ventilation is easily effected by means of open windows and doors. To avoid dangerous draughts of the incoming air of a low temperature, boards are sometimes placed under the lower sashes of the windows, so as to allow the current of air to pass upward and away from the heads of the pupils. To effect the same end, the upper segments of windows are made to turn upon hinges. Open doors into large well-ventilated hallways have also been found useful means of ventilation.

Ventilation by
windows and
doors.

To effect ventilation that is at all adequate in weather having a temperature below 50° F., the natural currents of air should be supplemented by artificial means, either by heated flues which eject the air from the room or by fans which force air into it. By the former method, called the vacuum or gravity system, fresh air takes the place of the air which is forced by gravity from the room through the heated flues. By the latter method, known as the plenum system, the forced current of inflowing fresh air drives the vitiated air from the room through flues provided for the purpose.

Two methods
of artificial
ventilation.

In regulating the introduction of air, great care

* This amount agrees with Dr. Billings's estimate, and is not far from the carefully wrought conclusions of De Chaumont, based upon the investigations of Pettenkoffer (4, p. 24).

Source of supply of air. should be taken respecting the source of supply. The air should not be taken from the basement, but from the outside, where there are no offensive odors or dust. Some means of furnishing moisture to the air should be employed.

Size of ventilating shafts. Attention should be given to the size, situation and number of ventilating shafts. The size of the inlets must be large enough to supply fresh air sufficient to compensate for the air that is taken out, and the outlets must be of sufficient size to make the desired change of air*.

Situation of flues. The flues should be so situated as to provide for the fullest circulation of air in the room. Experiments have shown that good if not the best results are attained by placing the inlet in the middle or upper part of the wall and the outlet near the floor upon the same side. It is also advisable to have two or more outlets, so as to avoid draughts occasioned by rapidly moving currents.†

In rooms where the warm air enters only in the

* Professor Clark (6, p. 66) estimates that a shaft 20 feet high, with a difference in temperature of 20°, should have a sectional area of $5\frac{1}{2}$ square feet to carry off 48,000 cubic feet per hour. This estimate is made upon the basis of supplying 1,000 cubic feet per hour for each pupil. To supply 2,000 cubic feet per hour, the sectional area of the outlet should be $10\frac{1}{2}$ square feet.

† The matter of location of inlets and outlets is discussed fully by Professor Burrage (3, p. 43); also by Mr. Carpenter (7, p. 55), who says that much depends upon existing conditions. He says: "It has been proved practically that with rooms of about the proportion shown in diagram [15:32] good results in the diffusion of heat and air are obtained by introducing the air at a point two thirds of the distance from floor to ceiling and near one corner, and locating the register for discharge of air on the same side of the room but near the floor and near the lower diagonal corner."

upper portion, and where there is no direct radiation, extra provision should be made for warming feet and drying clothing. This may be done by placing radiators or registers at the floor of the halls, where heating rather than ventilation is the main desideratum.

Direct radiation in halls.

An open fire is a poor means of heating, but an excellent means of ventilation. Many modern school buildings have fireplaces in every room, in most of which no fire is ever made. Doubtless the unused fireplace may serve as a means of ventilation, but not nearly so efficiently as a fireplace with even a little fire in it. Apart from possible dangers of drafts, there is probably no better means of carrying away the vitiated air than an open fire. The excuse usually offered for not having a fire in the fireplace is entirely insufficient. There is no good system of ventilation that does not require care, trouble and expense.

The open fireplace as a means of ventilation..

This may be a good place to say that skill and good judgment are necessary in looking after any appliance designed for ventilation. It should not be intrusted, for the sake of economy or any other reason, to ignorant or unreliable persons, since ordinarily as much depends upon the way in which a system of ventilation is managed as upon the system itself. Nor should a knowledge of the system used be confined to the engineer or janitor. For the sake of needed co-operation, the superintendent of schools and the teachers—especially the principal—of the school in which the system is used ought to know the construction of the system and the best method of working it.

Management of apparatus.

In the best systems of ventilation flushing of the schoolroom by natural air currents is necessary to

Frequent sweep of winds through rooms necessary.

carry off the organic dust and condensed vapors which cannot be fully taken away by the ventilating flues. Upon this point Professor Clark says (6, p. 63): "Nothing can take the place of aeration by means of open windows. Artificial ventilation though required for changing the air when the windows are necessarily closed, is insufficient, even under the best circumstances, unless the room is from time to time thoroughly refreshed and purified by the sweep of the free winds through all its windows widely opened. Such an atmospheric washing should be secured three or four times daily in all weathers; at recess, particularly, it should be insisted on, banishing teachers and pupils from the room meanwhile, if necessary."

Direct radiation not desirable.

In the choice of means of heating schoolrooms, the necessity of bringing into them the needed supply of warmed fresh air must be kept in mind. The direct radiation from stoves and from steam and hot water pipes does not accomplish this end, and is therefore not a desirable means of heating. This statement applies only to schoolrooms where there is not an adequate supply of warmed air by furnace or indirect radiation. Heating by direct radiation alone may be permitted in dressing rooms and halls, but not in schoolrooms. If, however, air from without is introduced behind the stoves and radiators, some of the objections are removed. The loss of heat by supplying air in this way is shown by Professor Woodbridge (8, p. 19). The method of supplying fresh air in rooms where stoves are used and of constructing outgoing air ducts will be referred to later. Hot water as a means of heating is to be preferred to steam, for the reason that in moderate weather the heat can be better regulated by hot

Hot water as a means of heating.

water than by steam, and that in very cold weather the air is not so likely to be overheated or "burned."*

The objections urged against heating by the hot-air furnace are: (1) An unequal distribution of heat in the various parts of a large building and in the upper and lower parts of each room; (2) the production and dissemination of offensive gases; (3) the occasioning of dryness of the air, already referred to. Makers of modern furnaces have sought to overcome all these objections, and in some measure have been successful, so far as small buildings are concerned; but for large buildings the hot-air furnace is not to be recommended.

Objections to hot-air furnaces.

Perhaps the most unsatisfactory means of heating schoolrooms is the ordinary wood or coal stove,—the means most generally employed in country districts. To avoid the unequal distribution of heat in rooms heated in this way and to promote in some degree ventilation, the stove should be enclosed by a metallic jacket, the enclosed chamber being connected with the outer air by means of a shaft of sufficient size to admit the needed amount of air. In addition to this, flues should be so constructed as to carry away the vitiated air in sufficient quantity to keep the air of the room in good condition. To avoid radiation from overheated surfaces, two stoves should be provided for use on very cold days. A more detailed description of this method of heating and ventilation will be given later.

Jacketed stoves for heating and ventilation.

By far the best method of heating schoolrooms is by indirect radiation, by which coils of pipe are

Indirect radiation preferred.

* The burning or dry sensation, as explained by Kotelmann (1, p. 113), is frequently due to the scorching of dust particles which come in contact with overheated surfaces.

heated in chambers, from which the warmed air is taken into the rooms. This is done either by the plenum or by the gravity system, already referred to. On many accounts the plenum system is to be preferred, by which the warm air is forced into the rooms by fans propelled either by electric or water motors or by steam. But in the opinion of good judges this plan works best when the foul-air flues are heated so as to draw the air from the rooms or when these flues are connected with exhaust fans. The only objection to the fan system is the first cost. When the system is once established, the cost of maintaining it is said to be less than the cost of maintaining a simple gravity system. This is especially true when the steam used in operating the fans is used for heating the rooms.

The fan
system.

It is not necessary to give in detail the plans of heating and ventilating by the method just described. It is used now in most of the larger modern buildings, and its merit may be easily tested by actual observation. The greatest difficulty is found in ventilating and heating small one and two room country schoolhouses. Respecting this difficulty Dr. Edward E. Shaw says (29, pp. 106-108): "In order to ventilate the rural schoolhouse, the stove should be placed in one corner of the room and near the chimney. The stove should be enclosed by a sheet-iron jacket, leaving a distance of from 18 inches to 2 feet between the stove and the inside of the jacket. The jacket should be about 6 feet high, and should extend to the floor. The opening in the jacket for the purpose of supplying the stove with fuel should be as narrow as feasible. A cold air duct should be constructed to lead from the outside of the building underneath the floor, and to open

The best ven-
tilation of one
and two room
school houses.

beneath the stove, so that pure, fresh air will flow in, be warmed by the stove, and rise to the ceiling.

“The point to be secured in the heating and ventilating of the rural schoolhouse is the quick and uniform distribution of the heat to all parts of the room. In the opposite side of the room from the stove, a tin or galvanized-iron ventilating duct should be constructed, oblong in shape, having its cross-section dimensions 12 x 6 inches. The open end of this duct should be within 1 foot of the floor. The flue should extend to the ceiling and run along the ceiling to the chimney. There should not be any sharp angle in this duct, but a curved bend where the upright section unites with that which runs along the ceiling. The ventilating duct should discharge into a large chimney flue at least 14 x 20 inches of cross-section area. In the middle of this flue there should run a sheet-iron pipe of sufficient capacity to the smoke and gases from the stove. The heat radiated from this pipe when there is a brisk fire in the stove will cause a strong draft in the flue and draw the air out of the schoolroom through the ventilating duct.

“The plan already described is the simplest and most economical for effecting some degree of ventilation in rural schoolhouses. A better plan would be to place the stove in one corner of the room surrounded by a sheet-iron jacket, and to construct a flue opening underneath the stove and connecting with the outer air, as has already been recommended. Three openings might then be made in the floor, one in the corner opposite that in which the stove is placed, and the other two on the sides of the room equally distant from the stove. These outlets through the floor, which are to be fitted with regis-

ters, should have tin ducts running from them and uniting into one duct just before opening into the ventilating flue, which is to be constructed as already described. This would secure a more even withdrawal of the vitiated air from the schoolroom, and at the same time a more equal distribution of heat than by the employment of a single duct."

Requirements
in Massachu-
setts

The standard of requirements made by the state inspectors of public buildings in Massachusetts is shown by the following statement which is sent to all the school committees of the state:

"In the ventilation of school buildings the many hundred examinations made by the inspectors of this department have shown that the following requirements can be easily complied with:

"1. That the apparatus will, with proper management, heat all the rooms, including the corridors, to 70° F. in any weather.

"2. That, with the rooms at 70° and a difference of not less than 40° between the temperature of the outside air and that of the air entering the room at the warm-air inlet, the apparatus will supply at least 30 cubic feet of air per minute for each scholar accommodated in the rooms.

"3. That such supply of air will so circulate in the rooms that no uncomfortable draught will be felt, and that the difference in temperature between any two points on the breathing plane in the occupied portion of a room will not exceed 3°.

"4. That vitiated air in amount equal to the supply from the inlets will be removed through the ventiducts.

"5. That the sanitary appliances will be so ventilated that no odors therefrom will be perceived in any portion of the building.

“To secure the approval of this department of plans showing methods or systems of heating and ventilation, the above requirements must be guaranteed in the specifications accompanying the plans.”

LIGHTING

The two chief considerations in reference to lighting schoolrooms are the amount of light and the direction from which it enters the room. In several European states the ratio of window surface to floor surface in schoolrooms is fixed by law, at 1 to 6 when the building stands free, and 1 to 4 when the light is obstructed by neighboring buildings (1, p. 47). In Prussia the least amount required is 1 to 5—a ratio now generally accepted as the least amount of lighting surface schoolrooms should have. This amount should be increased if the light is obstructed by high buildings or trees.

Ratio of window surface to floor surface.

Many authorities agree with Dr. Cohn, that there cannot be too much light in a schoolroom (12, p. 99). The test of brightness certainly should be applied to places farthest away from the windows, and upon cloudy days. The standard usually recognized in Germany (4, p. 34) is that of a minimum brightness on dull days of 10 normal metre-candles, *i.e.*, of 10 spermaceti candles, 1 metre distant, each candle weighing $\frac{1}{6}$ of a pound.

The minimum of light needed.

Where photometric measurements cannot be made, Von Hoffman's method of testing the amount of light might be followed. He says that the light is insufficient when a normal eye cannot read the Snellen type No. 6 at a distance of 6 metres (4, p. 34). Other tests suggested by Dr. Burnham are to ascertain if every pupil can see some portion of the sky, or if every normally sighted pupil can, upon a cloudy

Distance of
seats from
windows.

day, read Diamond type at a distance of 30 centimetres.* Dr Burnham further says: "The light in schoolrooms is very apt to be deficient, because officials do not realize that light diminishes, not as the distance, but as the square of the distance." It seems reasonable to place 20 feet as the greatest distance from which any pupil should be seated from a well-lighted window.

Direction from
which light
should enter
the room.

As to the direction from which the light should enter the schoolroom, authorities are divided. Professor Forster, Dr. Young (2, p. 261) and others urge that schoolrooms be so situated that no direct rays of the sun can enter them; while Dr. Cohn, Dr. Burgerstein (12, p. 11) and many others advocate a southern exposure for the rooms. Perhaps a compromise may be made by having the room exposed to the sun's rays a small portion of the forenoon or afternoon. Dr. Kotelmann (1, p. 36) has this view, and says a southeast exposure is to be preferred.

Again, there is some difference of opinion as to the proper direction of light in respect to the pupils at their seats. The weight of opinion, however, seems to favor admitting the light from the left of the pupils, or from the left and rear, provided the former light is the stronger. Nearly all authorities are agreed that lighting from both the left and right sides is not advisable. In no case should the light come to the pupils from the front. The windows should consist of large panes of glass of good quality. They should extend as near as possible to the top of of the room, and be placed close together.

Venetian blinds† and curtains of a dark color are

* This footnote is printed in Diamond type.

† Professor Forster (3, p. 55) and Dr. Kotelmann (1, p. 50) both condemn the use of Venetian blinds in schoolrooms.

not favored, on account of their obstruction to light. Fixtures should be used which will permit the curtain to be raised from the bottom, or so that it may be raised or lowered from the middle of the window, as circumstances require. It should be remembered, however, that the upper part of the window is much better for lighting purposes than the lower, and that it should not be covered by a curtain unless to shut out the direct rays of the sun.

Kind of
curtains
needed.

In rooms that are insufficiently lighted, the ceilings and walls should be light, but not dazzling. A light gray or green color for the walls is recommended by good authorities. The light of such rooms is increased and diffused by the use of prisms and reflectors. Hennig's daylight reflector is described by Kotelmann (1, p. 46) and recommended by him. In our own country the products of the American Luxfer Prism Company of Chicago and New York have been in successful use in stores, factories and schoolrooms. From tests recently made in the Massachusetts Institute of Technology, under the direction of Mr. Charles L. Norton, the following conclusions were reached, as stated by Mr. Edward Atkinson:

The use of
prisms and
reflectors for
the diffusion of
light.

“First.—Windows of the customary height, but of one-third the width commonly adopted, when glazed with ribbed or suitable prismatic glass, will give on a bright day as much effective light as the full width of window glazed with plane glass; on a cloudy day, or in a position where the light from the sky is derived from a limited area, even a greater ratio.

“Second.—Windows of the common type now in Dr. Kotelmann estimates that only .6 to 1.5 per cent. of the daylight passes through the slats inclined 45°.

mills, workshops or schoolrooms, now fitted with plane glass, if reglazed in the upper half only with ribbed or prismatic glass, will yield on a bright day more than fifty per cent. excess of effective light, or on dark days a larger ratio. If reglazed down to but not including the lower panes (in which we advise plane glass), the increase in effective light will be much greater."

WATER-CLOSETS AND OUTBUILDINGS

In places where there are systems of sewerage and water supply, there ought not to be any difficulty in keeping the water-closets in a perfectly good condition. The problem of preventing an offensive and unsanitary condition of the premises is especially difficult in places where there are no water system for flushing and no sewers to carry off the refuse matter. Where there is a water supply without sewers, the temptation is to empty the refuse into cesspools. But this should not be done. The cesspool Professor Burrage regards as "one of the greatest of sanitary evils" (3, p. 60), and as "more dangerous than the badly constructed sewer."

The danger of
cesspools.

Where circumstances do not permit the erection of water-closets, or the ventilating, drying or fire closets (3, p. 61) which are now successfully used in many places, separate sanitariums must be provided, and cared for in ways which will prevent the dangers of infection or the annoyance of bad odors. To accomplish these ends, (1) the privies should be placed at a good distance from the school building; (2) the privy vault should be entirely above the surface of the ground, the catch-basin being constructed so as not to leak; (3) provision should be made for the storage of dry earth or sifted coal ashes, and

Location and
management of
sanitariums.

for sprinkling the catch-basin daily with this material. "Nothing less commendable" than these accommodations for sanitarines, says Dr. Young (2, p. 253), "should be tolerated."

WATER SUPPLY

The purity of water supply for schools is no less important from the standpoint of health than that of the air supply. Under the laws of the state there seems to be ample protection from the harm in the case of public water supplies. The greatest danger lies from the use of water taken from wells in remote country sections, and especially wells that are used only a portion of the year. Respecting these sources of water supply for schools Dr. Frank Wells says (26, p. 17): "During the vacations no water is taken from them, and hence it becomes stagnant. In the autumn, when the term commences, the water in this condition is drunk by the scholars, thereby, either alone or in connection with the unsanitary condition of the surroundings, tending to produce sickness, which may be wrongly attributed to the houses in which the children dwell."

The use of wells in country towns.

Unfortunately, the purity of water, unlike that of air, cannot be ascertained by simple tests (27, p. 80). The only safe course for school authorities appears to be to examine carefully the surrounding conditions, nearness to privy vaults, cesspool, drains, etc., and, if there are possible occasions of contamination, to call the aid of the State Board of Health or an expert analyst.

Examination of conditions desirable.

BATHS

The great use of baths in connection with the schools is becoming to be recognized, both on account of the means they afford for cleanliness and for the

School baths in
Germany.

habit which frequent bathing tends to form. School baths have been introduced in several cities of Germany with great success. Dr. Burnham describes briefly the plan pursued in these cities, and further says (4, p. 38): "The reports from those schools where baths have been introduced are uniformly favorable. The bathing is usually voluntary, but it is generally approved by the parents. Some of the children have a sort of hydrophobia, at first, but generally after a little time enjoy the bath. In Gottingen, after a half year, ninety per cent. of the pupils voluntarily shared in the school baths. The children return to their study refreshed in mind and body. There is an improvement in the air of the schoolroom. It is maintained that the bath has an educating effect upon the children, in giving them a sense of cleanliness. Much stress is placed also upon the educating influence that the introduction of school baths has upon the parents, in making them care for the children's underclothing and the like. In many cases great improvement in the health of children has resulted from the habit of regular bathing."

Baths in the
Paul Revere
school, Boston.

In Boston, one of the schools—the Paul Revere—is supplied with baths whose use is thus described by the principal, Mr. Dutton: "Since the baths have been opened, an average of 175 pupils have had a bath every school day. This gives every pupil in the school over 8 years of age an opportunity to bathe once a week, and 95% improve the privilege. The baths are in charge of a matron; each class is assigned a time to bathe, as they would for a recitation.

"The scheme works smoothly and beautifully, and is a blessing to the children physically, mentally and

morally, and a blessing to the teachers, too. I am inclined to think that, if a child bathes once a week from 8 to 14 years of age, he will always seek to be clean and wholesome.

"The city furnishes towels and soap. The average expense thus far, per bath, has been about 3½ cents. I think and trust that the time is at hand when all of our schools will be equipped not only with shower baths but with swimming pools. As educational agents they cannot be surpassed."

The expense given above is much greater than that of the school baths in Germany, which are stated to be about one-fourth of a cent apiece. In Germany, however, "the pupils bathe by classes, the bathing is carefully supervised, pupils come in divisions like soldiers and follow each other every five minutes, and thus a large number of pupils bathe in a very short time" (4, p. 38).

FURNITURE AND FURNISHINGS

Investigations have clearly shown that there is a close relation between certain physical deformities and wrong habits of sitting occasioned by continuously constrained and unhygienic positions in school. As a consequence, the importance of providing proper desks and seats in the interests of health is now generally recognized. The width, height and shape of the seat, the shape, height and slope of the desk, the distance between the seat and the desk and the distance between the height of the seat and that of the desk, are considerations which have received the closest attention of specialists both in Europe and this country.*

Desirable
features of
desks and
seats.

* For the detailed records of investigations and conclusions of specialists see (12, p. 55; 1, p. 128; 2, p. 270).

The following statements may be said to fairly summarize their conclusions:

Height of
desk and size
of seat.

The height of the desk should be the distance from the sole of the foot to the knee, equal, according to careful estimates, from $\frac{3}{11}$ to $\frac{2}{7}$ of the height of the pupil. The width of the seat should be about $\frac{3}{4}$ of the length of the upper leg or $\frac{1}{3}$ of the height of the pupil. It should be sloped gently backward, and its edge should be rounded. The back rest should be such as to give support to the back under the shoulders and above the hip bones. The distance from the front edge of the seat to a perpendicular dropped from the rear edge of the desk should be for writing a minus distance; that is, the edge of the desk should overlap the seat from one to two inches. For all other purposes the distance should be zero, but never plus.

The distance
from seat to
desk.

Relative height
of desk and
seat.

These conditions imply that either the top of the desk or the seat must be movable. The difference or perpendicular distance from the seat to the upper edge of the desk should be such that the pupil sitting erect can easily place his forearms upon the desk without changing the natural position of the shoulders. Some authorities say that this distance should be about $\frac{1}{6}$ the height of the pupil. The slope of the desk should vary from that of about 30° for writing to that of about 45° for reading, which again implies a movable desk top.

Movable desk
tops and seats.

The desirability of having some arrangement by which pupils may easily get into and out of their seats and stand in recitation is an added reason for providing more room between the desk and the seat than is permitted by the above-mentioned measurements. Many inventions have been made to supply these needs, as well as to secure a varying slope of

the desk top;* but, apart from the common hinged seat, few of them have as yet been adopted by American school furniture makers. Where the small seat is used there is less need of movable desk tops and seats than where the seat is long and is of uniform width, as it is generally in Germany.

The minute studies from which the above general statements are derived were made with reference mainly to stationary desks and seats. A large number of measurements and estimates have been made, so as to ascertain the average size of the bodies of pupils for pupils of a given age. While the tables embodying these estimates are of great value to school authorities who desire to know the approximate sizes of desks and seats needed, they are of comparatively little value to those who secure for the schools adjustable seats and desks. Such furniture will come more and more into use, in spite of its increased cost over the stationary kind, as the necessity of a constant adjustment of the school seat and desk to the corresponding measurements of the child's body becomes obvious.

Adjustable
seats and
desks.

While the measurements and directions above given are of special value to the authorities who are selecting and putting down stationary desks and seats, they will also be found useful to those who are setting up and adapting to pupils the adjustable desks and seats. Some of these seats are constructed with reference to changing not only the height of the desks and seats but also the slope of the desk top.

Of school furniture, other than desks and seats,

* A full description of these inventions in Germany is given by Burgerstein (12, p. 75) and by Kotelmann (1, p. 147). An interesting essay upon school seats, by Drs. Bradford and Stone, is printed in (13, p. 611).

which should be selected on hygienic grounds, may be mentioned movable blackboards, crayons, erasers, outline maps and drinking cups.

Blackboards
and crayons.

The material to be preferred for a movable blackboard is natural slate, both because it can be erased with a moist cloth or eraser, and thus reduce the amount of dust raised, and also because it has not a shiny surface. Artificial applications that have not these objectionable features may be used. The dustless crayons are likely to raise less dust than the ordinary crayons, and for that reason are to be preferred; but when they are so hard as to give faint lines, they should be used sparingly. Crayon holders, especially for colored crayons, are recommended.

Charts and
text-books.

Outline maps should be selected that have clearly drawn lines, and should be placed for use upon map stands in a good light near to the pupils using them. Care also should be taken to select only those books for pupils' use which have clear and well-defined print, and whose pages have a plain, dull surface. This is especially important in the selection of text-books, or those books which are in constant use by the pupils. The best authorities advise for young children books printed from "Pica" or "Great Primer" type, and condemn, for pupils of any grade, the use of books printed from type smaller than "Long Primer."

The following are illustrations of these types:—

Long Primer

Pica

Great Primer

Much attention has been given of late to the dangers of the common use of drinking cups in

school. To avoid all possible dangers of infection, either individual cups or the drinking fountain should be used. By the latter plan, pupils are enabled to drink from a constantly flowing jet of water rising three or four inches, thus avoiding all possible danger of contamination. The fountains are used with success in Boston (Roxbury), and Webster, Mass., Plainfield, Asbury Park, and Westfield, N. J.

Drinking cups and fountain.

The common use of penholders and pencils by the pupils, though less objectionable than the common use of drinking cups, is nevertheless to be avoided as far as possible. Each pupil of the schools of Springfield, Mass., is provided with his own penholder and pencil at the beginning of the year, as well as with a drinking cup.

Penholders and pencils.

THE CARE OF SCHOOL BUILDINGS AND APPLIANCES

What has been said of the importance, from a hygienic point of view, of care in connection with ventilation, may be said with equal force of the school building in general. It should not be necessary to say that the schoolrooms should be kept as free from dirt and dust as good homes, and yet the fact is quite forgotten by many persons who have the management of schools.

In the first place, the thorough cleaning which every good housekeeper deems necessary for her home at least once a year should be done for the schoolhouse. A few days before the end of the summer vacation the floors should be thoroughly scrubbed and all other parts should be washed and wiped. The windows should be washed frequently.*

The washing, sweeping and dusting of school houses.

* Eulenberg and Bach (11, p. 544) say that the windows should be washed every month. When windows are washed,

During the school year the floors in all parts should be swept, or, if oiled, carefully wiped three times a week, the more exposed parts being brushed up daily. The rooms should be carefully dusted daily with a damp cloth. The sweeping and dusting should be done at such a time and in such a way as to leave no floating dust in the room while the school is in session. The best time and way of sweeping is after school at night, with open windows, the floors being sprinkled with damp sawdust.

Oiled floors.

One method of allaying the dust in schoolrooms, to which much attention has been given recently, is that of oiling the floors. If the material is wisely selected and carefully put on, great good from a sanitary point of view will result. But the floors so treated must be wiped off frequently, to accomplish fully the desired results. Annoyance from oiled floors on account of their soiling dresses will be slight, if too much oil is not used and the floor is frequently cleaned.*

The care of
water closets
and urinals.

The sanitaries need careful attention daily. Water-closets and urinals should be thoroughly flushed two or three times a day, and all traces of uncleanness be wiped away. Occasionally simple disinfectants and deodorizers, such as superphosphate and lime, should be sprinkled in the vaults and about the urinals; but it should be understood

as they frequently are, only in July, they are likely to become dusty before the school begins in September. The better time for washing the windows is September or October.

* The desirability of keeping the schoolrooms free from dust, especially those rooms in which gymnastic exercises are given, is shown by a scientific treatment of the dangers of breathing dust, written by Dr. Schmidt and quoted by Dr. Young (2, p. 225).

that nothing of this kind can take the place of a liberal application of water. In places where there is no plumbing, corrosive sublimate, bleaching powder, or copperas may be used as a deodorizer.

If the sanitary drinking fountain, such as has been referred to, is not used, or if individual drinking cups are not provided, the cups used for drinking should be washed frequently with hot water and soap. If the building is supplied with public water, the cups should stand under running water all the time during school hours. In some quarters the custom has prevailed of using each night sulpho-naphthol in disinfecting the drinking cups. It has also been used about doors, hand rails and sanitariums.

Care of drinking cups.

One possible cause of infection is the common use of pencils, penholders, erasers, etc. This danger has been prevented to a large extent in Everett, Mass., by a simple means of disinfection devised by Dr. Whitehill of that city. It is thus described by Superintendent Condon:

The disinfection of apparatus.

“The danger of contagion through the distribution of pencils, penholders, drawing models and other articles which are used by several pupils, has long been recognized by the medical profession. We believe it has been left for a member of your board Dr. G. E. Whitehill, to devise a simple, inexpensive and yet effective piece of apparatus for thoroughly disinfecting supplies of this kind. The apparatus consists of a tin chest, with a tightly fitting cover, in size 12 by 12 by 15 inches. In this is room for trays 1 inch in depth, with wooden sides, and the bottom covered with wire netting of a small mesh. The bottom tray rests upon a narrow shelf at each end, having a space $2\frac{1}{2}$ inches below the lowest tray.

The other trays rest upon each other. In the free space at the bottom is kept a sponge saturated with formaldehyde. Each class room is supplied with a tray, and as the pencils, penholders, erasers or other articles are collected, they are placed in this tray, to be left over night in the tin chest. The formaline gas evaporates and comes in contact with all the articles in the different trays, destroying any germs which may have adhered to them.

Rules for
avoiding in-
fection.

The danger from infection is partially met in the recommendations of the Marlborough, Mass., board of health: (1) That the teachers in the schools shall require each pupil to keep and use his own individual books and school apparatus, desk and chair in the schoolroom, and hook for outside clothing; (2) that only such apparatus be used in the schools as can be thoroughly cleansed and disinfected by being dipped in boiling water; (3) that the drinking dip-pers in the school buildings be boiled as often as once a week.

Next in importance to providing windows and shades of the right kind in schoolrooms, is the proper care of them. The windows should be kept clean by frequent washing and wiping, and the curtains should be so managed that all the pupils may receive the most and best light that the windows will afford.

Care of win-
dows and
management
of curtains.

It is safe to say that in a majority of rooms whose windows are furnished with curtains the latter injunction is not followed. The curtains generally are drawn from the top, and in far too many rooms they cover during the entire day—and sometimes during cloudy days—the upper third or half of every window. Sometimes also the curtains upon the windows placed in front of the pupils are not drawn, while

much work is required to be copied from black-boards situated between two windows.

There can be little wonder at the large number of pupils in the middle and higher grades having diseased eyes, when the prevailing conditions and practice in the schools are considered. In almost every one of the scores of investigations which have been made within ten years in Europe and America the results were most alarming,—from 20% to 60% of children in the elementary schools having defective sight, and even a higher percentage in high schools.*

Some investigations have shown that, while many cases of impaired sight may be traced to inheritance, a large percentage of cases is directly due to an overstrain of the eyes in school.† Teachers should constantly guard themselves against requiring written work to be done during cloudy days, especially during the last hour of the day. Upon very dark days very little reading or study should be required. In schools which have more than one grade there should be at such times oral and general exercises for all the pupils.

In no respect are complaints of neglect more frequently heard from superintendents than in connection with the care of the heating and ventilating apparatus. In rooms heated by stoves it is not

*For details of some investigations, see 3, p. 151; 1, p. 241; 2, p. 100; 12, p. 353; 4, p. 7.

† Dr. Kotelmann cites several instances (1, p. 112) in which great differences in the soundness of pupils' eyes were shown to be due to differences of school conditions and requirements. In one case the percentage of myopia had in eight years decreased three to fifty per cent. in the various rooms of a high school whose hygienic conditions had been improved.

uncommon to find the temperature below 60° during the first hour of the morning session, because the fire was built late, and 75° or 80° later in the day. The all too small aperture for letting out the impure air is frequently closed by janitors, and allowed to remain closed by carelessness of teachers.

Even the best apparatus for heating and ventilation does not escape the results of carelessness and ignorance. The stack heater for the exhaust flue frequently remains unused for days and weeks together, simply to save coal or kerosene, or possibly a little trouble. Janitors are inclined to close the fresh-air inlets in cold weather, and permit air to enter from the basement, with the result of having the air circulate through the schoolrooms and water-closets in common. So many and various are the ways of neglecting the ventilating apparatus, that nothing short of a complete automatic attachment will suffice to keep the room unfailingly at the desired temperature of 68°.

COMPOSITION AND ADJUSTMENT OF THE SCHOOL PROGRAMME

Thus far among hygienic conditions for which school authorities are alone responsible, I have referred only to those of an external kind. Other conditions of the same class affecting the health of the pupils are those which relate to the composition and adjustment of the school programme. These will be treated briefly under the following heads: (1) course of studies, (2) daily programme and instruction, (3) intermissions, (4) school sessions, (5) length of recitation, and (6) amount of work required of pupils.

Course of Studies.—It is easy enough to say that the school programme should have such an extent, variety, and arrangement of studies as will conduce to the physical as well as mental well-being of all the pupils; to make and apply such a programme is quite a different matter. The difficulty of arranging a course of studies suited to all is realized when it is known that all pupils, the bright and the dull, the strong and the weak, should have enough provided for them fully to tax their powers without injury either to the body or to the mind.

Difficulty of arranging a course of study suited to all.

The task, however, of laying out a general course of studies is considerably lessened if it is kept in mind that the adaptation of subjects to pupils lies largely with the teacher. To give her sufficient freedom in this regard, the course which she has as a guide must be general and elastic; that is, it must be such that the work required of pupils will be subject to conditions of temperament, health and outside demands, as well as to those of intellectual ability.

An elastic course needed.

So important is this principle of adaptation, and such is the difference in pupils, that, if the requirements of any course of studies prevent one pupil from doing much more than what another pupil of the same class will be able to do, or if they force one pupil to do much less than what another pupil of the same class ought to do, they are not what they should be.

Again, the importance of protecting the children during the transition period from the kindergarten to the school or from the home to the school should be recognized by giving a large proportion of obser-

Transition period.

vation, manual and physical exercises during the first year or two of the course.*

Anxiety attending examinations and promotions.

It is well known that it is not so much the amount of work that one has to do as the worry occasioned in doing it that causes physical and mental collapse. And so it is not so much the number of studies, or even the amount of work given to them, as the strain of anxiety in preparing for examinations, and fear of not being promoted, that most injures the pupils. So far as the course of studies has to do with these occasions of exhaustion and ill health, it should be made so as to protect both teachers and pupils from possible excesses or mistakes.† •

Allowance of time for physical training.

In the interests of health, there should be a liberal allowance of time provided in the course of studies for physical and manual exercises‡ and for instruction in physiology and hygiene. The amount to be done in these subjects and the place in the programme they should take will be referred to later.

Treatment of defectives.

The course of studies of the larger cities should make provision for all defective or weak-minded children that are not provided for by the state, giving the utmost freedom and opportunity to teachers of small classes to adapt the work to the needs and capacity of individual pupils. Of this

* The reasons for limiting the formal work of the first year in school and a detailed plan of exercises for that year are given in the sixty-second annual report of the Massachusetts Board of Education, pp. 409-413.

† Matters of grading and promotions of pupils are discussed in the sixty-first report of the Massachusetts Board of Education, pp. 297-314; also in (13, pp. 303-356).

‡ For a careful estimate of the proper proportion of time which should be given to drawing, manual training and singing, see pp. 457-479 of the sixtieth report of the Massachusetts Board of Education.

class of children Dr. Lincoln (16, p. 83) writes: "Outside of the class returned in statistics as feeble-minded, there exists a much larger class (perhaps five in a thousand) of 'backward' children, a type with which all primary teachers are familiar, who are so deficient as to be incapable of profiting by ordinary school methods. They constitute a distinct type, differing from the grosser types only in degree of defect; they display all the cardinal features of imbecility in a lesser degree. Few classes are without some specimen, hopeless under existing conditions, yet fondled and defended by parental love, which can see no inferiority in its own offspring. A movement for the education of these children in special classes under trained inspectors has just begun in the United States, which up to the present includes the cities of Providence, Worcester, Springfield, Boston, Philadelphia and Chicago."

Special classes for weak minded children.

The children here referred to belong to what has been called the "abnormally deficient" class,—a class separate and distinct from the class consisting of merely dull children of normal type. These children should also have special provision made for them, not only on account of the better progress they will make in their studies, but also on account of the desirability of preventing tendencies to moral and physical degeneracy. In many places, at present, small ungraded classes are formed for the benefit of children who are slow, or who for other reasons need individual attention. Such classes generally consist of not more than twenty pupils, and the work done is mainly with individual pupils. Transfers are constantly made to and from the class, as occasion demands.

Special treatment of dull children.

Daily Programme and Instruction.—There is a feel-

Opinions relating to "over-pressure".

ing abroad, occasionally expressed by physicians and newspaper writers, that there is "over-pressure" in the schools to such an extent that many children are falling by the way and made invalids for life. There is another feeling abroad, expressed quite frequently by opponents of the "new education," that teachers are doing too much for their pupils, and are thereby helping to create a race of degenerates,—“soft pedagogics” is the term sometimes given to designate the process.

Hard intellectual work no injury.

Widely divergent as are these criticisms of present practice in the schools, there is perhaps enough truth in both charges to put teachers on their guard in respect to the demands they make upon their pupils. Viewing the matter solely from the standpoint of health, we may agree that hard intellectual work *of the right kind*, done within proper limits of time, can in no way be injurious to children. It must be as healthful for them to exercise the brain actively as it is for them to exercise the legs actively. It is not hard work that is harmful or repugnant to the normal child so much as work which is not suited to his needs and powers.

Of course a discrimination must be made between the natural tendencies of the child and those tendencies which have been imposed upon him. The former may lead and point the way of the best training, while the latter may indicate the course to be resisted.

The problem—not less work but less fatigue.

What is needed for health's sake is not necessarily to lessen the work of children, but to lead them to work in such a way and at such times that the largest results in mental strength and alertness will be gained with the least fatigue. This is not done by carrying on the same subject or kind of work too

long at a time, or by giving work that is uninteresting. The duration of effort is not always the measure of fatigue attending it, and neither time nor fatigue necessarily determines the amount or intensity of effort exerted. There is some study which cheers and invigorates, while there is other study which palls upon the mind and wearies it to the point of stagnation. No one will say that the former study, although alert and active, is nearly as harmful physically as the latter. The two states of mind needed for the physical as well as for the mental well-being of pupils are interest and freshness; the former depending largely upon the subject and the way it is presented, and the latter upon the times in which the recitation or study is carried on.

Interest and freshness necessary to best work.

One means of determining the proper place and order of recitations in the day's programme is the condition of the pupils in respect to fatigue. While work of any kind must be accompanied by fatigue, and while fatigue in itself is not harmful (17, p. 144), it becomes harmful when long-continued or heavy demands are made upon the mind which lead to exhaustion and disease. Both experience and fatigue studies have shown that the branches of study which most tax the mind should be given in the early part of the day, while the children's minds are rested, and that those which make the least demands should be given later. The subjects upon good authority which are most fatiguing are mathematics and foreign languages, and those which are least fatiguing are singing and drawing (18, p. 81). If the school day of five hours is divided into two sessions, it would seem best to have a three-hour session in the forenoon, occupied by recitations and study that are most taxing to the pupils; and a two-

Fatigue harmful when long continued.

hour session in the afternoon, occupied by singing games and manual exercises. What has been said of the desirability of placing the most taxing recitations early in the day will apply to written examinations which have been found to be very fatiguing.*

A liberal allowance for intermissions.

Intermissions.—Results of investigations have shown that the time of the short recess and even that of the long noon intermission is not long enough fully to rest the pupils; that is, at the beginning of the period after the intermission the available strength for mental work is not as great as at the beginning of the morning session. The extended scientific observations of Burgerstein in Germany (12, p. 237) and of Key in Sweden (1, p. 227) all go to prove that a liberal allowance should be made for intermissions during the school day,—an allowance even greater than is made in Germany,† and far greater than is made in any of our American schools. Thus Kraepelin (1, p. 194) says that recesses should be longer than they generally are, and should follow one another at shorter intervals; and Kotelmann (1, p. 195) approves the programme proposed by Hakonson-Hansens, in which, in a six-hour school day, from 8 A. M. to 2 P. M., there are six intermissions,—five of ten minutes each and one of twenty minutes.

These recommendations, based upon the most

* Dr. Newsholme and others (28, p. 66) would diminish fatigue by change of subjects; alternating language or history with mathematics, and mentally fatiguing subjects with penmanship or manual training.

† In Prussian secondary schools the total time given to intermissions daily must be not less than forty and not more than forty-five minutes. In Bavaria the same class of schools are obliged to have a recess of ten minutes every hour.

careful investigations and the most universal practice of German schools, may well lead us to question the wisdom of our school authorities in limiting the time of recesses as much as they do. Especially should they attract the attention of those who are inclined to abolish the recess altogether, or to substitute gymnastic exercises for the games of the old-fashioned recess. More will be said upon the subject, when the general hygienic treatment of pupils is discussed.

School Sessions.—As to the desirability of having two school sessions or one in the day, there is, as there well may be, a difference of opinion, for there are good reasons as well as objections that may be urged upon either side of the question.

Arguments for and against the single session.

The arguments usually given in favor of the single session are: (1) the shortness of the days in winter, and consequent limited period of daylight; (2) the saving of an extra walk to and from school; (3) the greater opportunity for needed recreation in the way of games, excursions, etc.

The arguments opposed to the single session and in favor of the double one are: (1) There is less danger from over-exhaustion, when there is an entire break of one or two hours in the work of the day, than when the work is continuous or when it is interrupted by only a recess of twenty or thirty minutes; (2) there is more likelihood of a good breakfast and dinner being eaten under the two-session plan than under the one.

If the above-named arguments fairly represent all that can be said upon both sides, it will be admitted that for hygienic reasons the two sessions should be preferred. This, however, does not in any way imply that the single session may not be so managed

as to conform thoroughly to the best hygienic rules; as, for instance, if pauses of ten minutes are given for recreation at the close of every recitation and study period, and if hot soup or some other nutritious food is supplied the pupils in a half-hour intermission.

Periods of
study and
recitation.

Length of Recitation.—There is substantial agreement among specialists as to the proper length of the recitation and study period. This agreement is summarized in the following statement, made by Dr. Rowe (18, p. 167): "The longest period which a child of 5 to 7 years should be expected to have for a given exercise should not exceed 15 minutes. For a child of 7 to 10 years, it should not exceed 20 minutes; for a child from 10 to 12, not over 25; and from 12 to 16, not more than 30. These figures have been approved both by experiment and experience. They are maxima for all confining exercises."

Requirements
of home study
in Germany.

Amount of Work required of Pupils.—European and American standards of what should be required of pupils differ considerably both in theory and in practice. Dr. Kotelmann points out (1, p. 212) that in the Prussian and Bavarian secondary schools from 6 to 12 hours a week of home study is required from pupils of the lower classes, and from 12 to 18 hours of such study from pupils of the upper classes. Some of the secondary schools of other parts of Germany make even more severe requirements than these. The requirements of the people's schools are doubtless less than are those of the secondary schools; but it is safe to assume that the older pupils of the former schools have not less than 12 hours of home work weekly.

When it is considered that the number of hours a week in which the schools are in session in January

is at least 20% more than our schools require, we can appreciate the enormous pressure that is put upon the pupils there. The specialists in hygiene recommend that the requirements of home study be lessened, as is shown by the following tables, the first being the recommendations of the expert commission for the secondary schools of Elsass-Lothringen (1, p. 213), and the second recommendations of Dr. Key, as quoted by Dr. Burgerstein (12, p. 289):

TABLE I.—*Showing the maximum hours per week recommended for school instruction and home study by the expert commission for the secondary schools of Elsass-Lothringen.*

AGE.	Class.	SCHOOL INSTRUCTION.				Home work.
		Studies.	Singing.	Gymnastics.	Total.	
7, 8.....	IX., VIII.	18	2	4 5	21—21½	6
			2	2 2		2
9.....	VII.	20	2	4 5	23—23½	5—6
			2	2 2		
10, 11.....	VI., V.	24	2	2—3	28—29	8
12, 13, 14,	IV., III.	26	2	2	30	12
15, 16, 17, 18,..	II., I.	30	2	2	34	12—18

TABLE II.—*Showing the number of hours per week recommended by Dr. Key for school instruction and home study.*

AGE	WHOLE NUMBER OF HOURS' WORK REQUIRED WEEKLY, INCLUDING SINGING AND GYMNASTICS		NUMBER OF HOURS WEEKLY REQUIRED FOR—		NUMBER OF HOURS OF HOME STUDY—	
	In the school and home.	In the school alone.	Singing.	Gymnastics	Weekly	Daily
7.....	12—18	12—18	1	2	—	—
8.....	18—24	15—21	1	2	3	½
9.....	24—30	18—24	1	3	6	1
10, 11...	36	29	2	3	7	1½
12, 13...	42	32	2	3	10	1½
14.....	48	35	2	3	13	2½
15, 16...	51	35	2	3	16	2½
17, 18...	54	35	2	3	19	3½

American practice varies greatly, but it is doubtful if the requirements of any school are as great as those recommended above. Practice in the best schools at present seems to favor a short divided

Requirements
of school at-
tendance in
America.

period of 3 hours' attendance for the younger pupils, and an attendance of 5 or 5½ hours for the older pupils. This amount of time spent in school, with a well-arranged programme, having the proper number of manual and physical exercises and recesses, ought not to be harmful to any well child.

The maximum
amount of
home study in
all grades.

But the proper length of a school day cannot be considered apart from the requirements of home study. The time given above ought to be all the time needed for study by pupils below the 7th grade, upon the assumption that children are admitted to school at 5 years of age, and that there are 9 grades below the high school. The maximum amount of home study for pupils of the 7th grade might be half an hour daily, and for pupils of the 8th and 9th grades from one hour to one and one-half hours daily. For pupils of the high school the maximum amount of home study daily might be extended to two and three hours.

These figures are given upon the assumption that no study of any kind shall be required or permitted at recess or after school.

The following table embodies the suggestions which I have made as to a proper amount of school and home study. It will be seen that the requirements are far less severe than those recommended by Dr. Key, but it is believed that they more nearly fit American conditions than his do.

School and home study.

GRADE OR YEAR IN SCHOOL	NUMBER OF HOURS WEEKLY GIVEN TO—				Study at Home	
	School Attendance (including recesses)	Recesses and gymnastics	Singing	Recitation and Study in school (not including gymnastics and singing)	Min.	Max.
1.....	15	2	1	11½	—	—
2.....	20	2	1	15½	—	—
3.....	27½	2½	1	22	—	—
4.....	27½	2½	1	22	—	—
5.....	27½	2½	1	22	—	—
6.....	27½	2½	1	22	—	—
7.....	27½	2½	1	22	1½	2½
8.....	27½	2½	1	22	2½	5
9.....	27½	2½	1	22	5	7½
10.....	25	2	1	20	7½	10
11.....	25	2	1	20	10	12½
12.....	25	2	1	20	10	15
13.....	25	2	1	20	10	15

The recommendations contained in the above table are made with confidence, since they agree with the practice of the most carefully managed American schools. Of course, it is understood that the amount of time indicated for home study is intended only for those pupils who are well. The time given is subject to change for those who for any reason cannot do the full work of the school without impairment of health. If children have to practise upon the piano one or two hours daily, or if by fulfillment of social functions they are unable to meet all the requirements of the school, they should stand precisely where the weak-bodied pupils do in relation to the school. Neither class is to blame for the obstructing conditions, and neither class should be made to suffer by too great exactions. But it should be understood that under such circumstances the work of a class or year is incomplete, and must be made up before full credit is given.

The requirements to meet existing conditions.

In one respect the recommendations of requirements above given differ from the requirements usually made, and that is in reference to the amount of home study. Two standards are set, one for the

Minimum and maximum requirements to be made.

least amount of time which should be spent in study, and one for the greatest amount of time so spent. These separate standards of requirements are fixed in the belief that the bodily as well as the intellectual welfare of the pupils is enhanced by an accommodation of demands to ability.

The ordinary practice is to state one period of time for home study, which is supposed to be the time suited to the "average pupil." The result is that some of the pupils far exceed the amount named, while others stop far short of it. Both classes of pupils may be injured, one from doing too much and the other from doing too little. The placing of a minimum for home study means that the bright pupils must not be deprived of the advantage of a certain amount of strenuous effort. The maximum limit is placed for the benefit of that class of pupils—generally girls—who conscientiously do more than is required of them, and who, for the sake of their health, need the restraint of a fixed standard of time for study, beyond which they shall not be permitted to go.

OUTSIDE CONDITIONS

Private lessons and social diversions.

In tracing the causes of ill health among school children, no one will deny that there are likely to be some causes for which the school authorities ought not to be held responsible. When we consider the close connection between one's state of health and one's habits in respect to eating and sleeping, and when, further, we consider the extent of control which the parents have or ought to have over their children in these respects, we cannot leave the influences of the home out of consideration in any treatment of the health of school children.

This consideration is all the more imperative on account of the fact that the school must take the child as it finds him, and must in the interests of the child conform to all the conditions imposed upon him from without. If his strength is given largely to private lessons or social diversions, or if his system is weakened by insufficient sleep or nourishment, there must be a certain degree of conformity of opportunity and demands to his impaired powers. The conditions cannot be fully met by the teacher without a knowledge of the child's impaired abilities and the occasions of them. A wise conformity to conditions means more than a mere acceptance of them and adaptation of the school programme to fit them; it involves an effort on the part of the teacher to remedy as far as possible the faults which obstruct the work of the school.

The causes of physical and mental weakness for which parents and pupils are responsible have already been hinted at. They are want of attention to diet and sleep, social diversions, uncleanliness and other bad personal habits. It is vain to suppose that these obstructive conditions can be fully controlled by the teacher, or even appreciably so, in a large number of cases. It is hoped, however, that every teacher will make an effort to urge upon parents and pupils alike the importance (1) of a large amount of restful sleep every night,* (2) of a

Causes of physical and mental weakness.

* Dr. Key, who has given much attention to the subject, says that children from seven to nine years of age need eleven hours of sleep daily, that children from ten to thirteen years of age need ten or eleven hours, and that children beyond this age up to eighteen need from eight and one-half to nine and one-half hours (12, p. 289). He found in his investigations in Stockholm that those pupils who had an insufficient amount

sufficient diet of nutritious food taken at proper times,† (3) of abundant recreations that will invigorate and refresh both body and mind, (4) of a careful attention to cleanliness by frequently brushing the teeth and bathing the body, and (5) of pure personal habits which will in no way injure the body or debase the mind.

Bad personal
habits among
boys.

To be successful in checking the evils of bad personal habits among boys, such as the use of tobacco and secret vice, demands the utmost efforts of teachers, who first of all must realize their prevalence and the enormous injury done by them to the body and mind. While the chief reliance for success must be made upon constructive lines, such as giving the pupils instruction in physiology, and

of sleep had from five to eight per cent. more sickness than their schoolmates who had sufficient sleep. Dr. Dukes (23, p. 124) would allow the following number of hours per night for sleep: children five years of age, thirteen and one-half; six, thirteen; seven, twelve and one-half; eight, twelve; nine, eleven and one-half; ten, eleven; eleven, ten and one-half; twelve and thirteen, ten; fourteen, nine and one-half; fifteen and sixteen, nine; from seventeen to nineteen, eight and one-half.

† The attention of parents and pupils should be especially called to the importance of eating a substantial breakfast, and of taking plenty of time for it. This advice is particularly needed for pupils of high schools, who frequently are found attending a five-hour school session after a hasty and insufficient breakfast. School luncheons should also be made a subject of careful attention. In many places food of a very nutritious kind and at little cost is provided at recess by the school authorities or by some one authorized by them. Dr. Newsholme (28, p. 96) recommends the giving of penny dinners, such as are given in some of the London Board Schools. He also recommends giving to each child in the poorer districts a mug of milk and slice of bread before the morning's work begins.

leading them into good habits of industry, the preventive and personal means must not be neglected, in which courage and tact will be required. For the fullest success in many cases, the co-operation of parents will be needed.

Dr. Burgerstein (21, p. 257) urges the great need of a systematic effort to spread hygienic knowledge among the people. The means recommended are as follows: distribution of brief tracts, courses in normal schools and secondary schools, university extension lectures, associations, popular lectures, reading rooms, portable exhibits.

Instruction for the people in hygiene.

Some superintendents have found it useful to send to parents at the beginning of the year a printed letter or circular, giving a few suggestions relating to the habits and health of the children. An example of what is needful for parents to know is shown in the following letter, prepared by Dr. Wm. H. Maxwell, and sent to the parents of all the pupils in Brooklyn when he was superintendent of the schools of that city. It follows, in the same circular, a letter addressed to teachers respecting the requirements they should make of the pupils.

A circular letter to parents concerning the health and habits of children.

TO PARENTS

1. The health of your children is paramount to every other consideration. When children, particularly girls, between the ages of ten and seventeen, exhibit evidence of nervous disorder, such as twitching of the face and hands, or extreme irritability, it is a sure sign either that the school work is too severe, or that they are not living under proper hygienic conditions, or both. In all such cases school work should be either materially lessened or be intermitted until there is a restoration to health.

2. In the majority of cases, to conquer the difficulties of arithmetic and grammar or the intricacies of a new language is harder work for the child than are, for the business or professional man, his everyday avocations. Hence, children need constant care, sympathy and encouragement.

3. Children should spend not less than two hours every day in the open air, and, if possible, should engage in games requiring both skill and activity.

4. Children should spend at least twenty minutes every day in practising at home the gymnastic exercises they learn at school.

5. Children should not be permitted to attend social parties or public meetings or entertainments on evenings preceding school days.

6. Children should spend in sleep not less than nine, and, if possible, ten, hours out of every twenty-four.

7. The following practices should be prohibited, as being injurious to health: study before partaking of food in the morning; the rapid reading of lessons just before the beginning of a school session; study during the noon intermission; study immediately after the close of school, before mind and body have been rested by play or other suitable change of occupation; study immediately after eating a hearty meal.

8. When children study or read either by sunlight or by artificial light, care should be taken that the light is sufficient, and that it falls upon the page from the left.

9. Children should have fixed hours for study, never exceeding the time specified in the rule of the board of education, and nothing should be permitted to interfere with these hours of study.

10. When parents find that their children, after conscientious effort, cannot accomplish the work assigned by the teacher in the time specified in the rule, they should at once communicate the fact to the principal of the school, and ask diminution of the tasks assigned.

11. Parents should never urge children to make extra efforts to obtain promotion, nor show annoyance if they fail to obtain promotion. What children need for intellectual and moral progress is systematic, not spasmodic, work. If, for any good reason, a child is not promoted or graduated at the end of term, he should not be reprimanded, but encouraged to try again. Nor should parents, by finding fault with the teacher, weaken her influence for good.

12. Cigarette smoking by growing boys is dangerous alike to the physical, the intellectual and the moral well-being. Parents cannot be too vigilant in preventing their sons, who have not yet reached maturity, from using tobacco in any form, and particularly in that of the cigarette.

INSPECTION AND SUPERVISION

In what has been said thus far it has been assumed that all the circumstances relating to the health of pupils should be known by the school officials, and that no adverse conditions be allowed to exist. The hygienic conditions of the school relate, as we have seen, to the location, construction and plan of buildings, school equipment, and the composition and adjustment of the school programme. The effects of adverse conditions must also be recognized before they can be properly prevented or treated. It is hardly supposable that all

Professional
advice and
assistance.

these circumstances and the means of correction can be fully known and understood by the teachers in charge. It is desirable, therefore, that they shall have such professional assistance or advice as will enable them to correct existing faults and to prevent disease and contagion.

The circumstances concerning which advice and assistance will be most needed are those relating to the ventilation and lighting of the schoolroom, the desks and seats, the amount and kind of mental exercises needed to keep the pupils in good physical health, the detection of incipient forms of disease, and the method of treating each pupil not in a normal condition of body or mind.

Medical inspection of schools.

The most apparent need of advice is in the detection of the first stages of contagious diseases, such as diphtheria, scarlet-fever and measles. The laws of Massachusetts provide for the careful exclusion of all pupils from school who are sick with or who have been exposed to infectious diseases;* but a careful observance of this law cannot prevent the spread of disease which appears in such incipient form as to escape the detection of parents and teachers. What is needed, for the sake of the community as well as of the persons afflicted, is some form of inspection which will keep from the school all pupils from whom there is any danger of contagion.

This is accomplished to a very satisfactory degree in so-called medical inspection, which is carried on in New York, Boston, Cambridge and several other American cities.

Plan of medical inspection in Boston.

The plan which has been followed in Boston for the past six years is as follows: By a special

* Chapter 496, section 11, Acts of 1898.

arrangement with the school committee, inspectors are appointed by the board of health to visit each day all the schools soon after the opening of the morning session. If any of the children appear not well, they are examined by the inspector; and if he finds any child with symptoms of an infectious disease he exercises his authority as agent of the board of health and orders the child to be sent home. He at once reports the case to the board of health, and follows it up, seeing to it that the child is either properly isolated or sent to the hospital. Later, he makes another visit, to see if all danger of infection has ceased.

If a child is found to be ill, but without symptoms of an infectious disease, "the teacher is advised to send the child home, with a message, written or oral, as may seem best, stating what the trouble may be, and suggesting, if medical care seems to be needed, that the family physician be called." Further particulars and results of the plan are given in Superintendent Seaver's report for March, 1900, (19, p. 38).*

It is entirely feasible for any city or town to follow the plan above indicated. Some idea of the cost will be gained from the following statement of Dr. Durgin, chairman of the Boston board of health (21, p. 1500): "The board of health divided the city into 50 districts, giving an average of about 4 schoolhouses and 1,400 pupils to each district. No difficulty was experienced in finding well-qualified

* Plans of general medical inspection are contained in the report of the board of school visitors, Hartford, Conn., March 31, 1900; also in (5, p. 17; 9, p. 54; 21, p. 1489). The last-named reference has accounts of inspection plans and results in Massachusetts, New York, Philadelphia, Berlin and Paris.

and discreet physicians who would undertake the duties prescribed, and the board secured and appointed one physician for each district, with a salary of \$200 a year."

Medical inspection of schools in New Jersey.

The laws of the State of New Jersey (chapter 96, article XXX., of the laws of 1900) provide that any local board of education may employ a competent physician, who shall visit the schools at stated times and examine pupils referred to him by the teachers, and, "at least once during each school year examine every pupil, to learn whether any physical defect exists, and keep a record from year to year of the growth and development of such pupil; which record shall be the property of the board of education, and shall be delivered by said medical inspector to his successor in office." The law further provides that he "shall lecture before the teachers at such times as may be designated by the board of education, instructing them concerning the methods employed to detect the first signs of communicable disease, and the recognized measures for the promotion of health and prevention of disease."

Inspection of sight and hearing.

The above law provides for one form of medical inspection which has been adopted with success in several cities and towns, and that is inspection of the sight and hearing of pupils. As would be expected, the results of investigations differ as to the percentage of pupils having defective sight and hearing, depending upon the age of pupils, conditions under which pupils have used their eyes, and the character of the examination; but all the tests that have been made thus far reveal the fact that the eyes of from 10% to 45% of the pupils of the schools are defective and that a good proportion of those who have defective eyes need special treatment.

The cases of defective hearing are less common than the cases of defective sight but they are found sufficient in number to warrant a careful inspection in every school.

The following results of investigations indicate the extent to which defective sight and hearing have been found under various conditions and show clearly the urgent need of systematic and general inspection. The difference of results is due in part to the difference of defects reported, some of the reports indicating serious defects only.

Results of investigations.

PASSAIC, N. J.—538 children out of 1,630 examined are reported as having defective vision.

LOWELL, MASS.—The sight of 45% of 300 children examined is reported as being defective, “a little less than two-thirds of the defects being serious enough to need correction.” In another examination of 524 pupils 165 or 31% were found to have defective vision. The number of these who were recommended to have medical treatment was 137 or 26% of the whole number. In still another test 2,081 pupils of the grammar and upper primary grades were examined and 44% of them were found to have defective sight, 27% of them needing special treatment.

CHICAGO, ILL.—From 32% to 41% of 4,765 pupils examined are reported as having defective sight, from 7% to 16% of the whole number being regarded as serious. In another investigation in the same city 6,729 pupils were examined with the following results: Defective in one or both ears, 1,080 or 16%; defective in both ears, 437 or 6.6%.

CLEVELAND, OHIO.—Whole number of pupils examined in 1900-1901, 32,939. Number with defects of special senses 6,169, of whom 359 are

reported as defective in hearing. In another examination the following year the sight and hearing of 17,017 pupils were tested with the following results: Number of pupils with defects of special senses 5,806, of whom 342 are reported as defective in hearing.

MILTON, MASS.—Out of 709 children examined 195, or a little less than one-third of the whole number, were recommended for further examination for glasses.

WELLESLEY, MASS.—Number of pupils examined 685, of whom 23% are reported as needing treatment on account of defective vision. In this examination only 30% of the children were found to have normal sight and 89% of them with normal hearing in both ears.

EVERETT, MASS.—Of 2,345 pupils examined 1,167 are reported as having perfect vision in both eyes. Of the others 539 were advised to consult an oculist.

BROOKLYN, N. Y.—Number of pupils examined, 50,000. Of these 28% were found to be deficient in eyesight and 10% in hearing.

Some of the above reported tests were made by specialists, some by teachers under the direction of a specialist and some by teachers with no directions other than those that were given with the Snellen test cards. Of course the tests made by or under the direction of an expert oculist are more accurate than those which are made without special supervision, but for the purpose of ascertaining defective sight and hearing and of reporting for treatment the more serious cases, the tests made by teachers are quite satisfactory.

The "instructions for examination" accompanying the Snellen test cards obtainable from publishers and oculists are sufficiently full to enable the teacher to designate those whose sight is but slightly affected and also those whose eyes are so seriously affected that they need to consult an oculist.

How tests may be made by teachers.

Teachers can also detect defective hearing so far at least as to know what pupils need professional treatment. The rule sometimes is for the pupil to stand 20 feet away from the examiner and to pronounce the word or words given by the examiner either in a whisper or in an ordinary conversational tone of voice. Some prefer to make the tick of a watch the test of hearing, the watch being four feet away.

One kind of investigation made by the physical training committee of the Brookline, Mass., Education Society deserves attention, on account of its unique character and the practical results it promises. The investigation was of the physical condition of the children and the hygiene of the classrooms, and was carried on with the assistance of the teachers and medical inspectors. The questions asked were in relation to the pupils' nutrition and condition of spine, and the ventilation, lighting, and temperature of the schoolrooms.

Investigation of the physical condition of the pupils in Brookline, Mass.

The results of the physical examination were as follows (22, p. 22): Out of 2,594 children, the nutrition was considered to be excellent in 1,603, or 62%; good in 605, or 24%; fair in 262, or 10%; poor in 104, or 4%.

In the same number the following deformities were observed: of the spine, 4; of the chest, 7; of the extremities, 9; of the head, 4.

A more individualized physical examination was

made by the same committee through the co-operation of some physicians. Sixty-one boys were examined, with the following results, in part (22, p. 23): Percentage of pupils having poor preservation of teeth, 29.5; abnormal condition of throat, 54.1; abnormal condition of heart, 24.6; abnormal development of chest, 16.4.

As one result of the investigation, the committee strongly recommended that certain vacant land be left an open space for a playground for the children of the neighborhood.

INSTRUCTION

Instruction in hygiene throughout the course.

From the beginning of the course to the end of it, careful and systematic instruction in hygiene should be given, first independent of anatomy and physiology, and later in close connection with those subjects.

Instruction to be practical.

It is not the place here to suggest methods of instruction, and yet it may be proper to state that instruction in hygiene will be effective only as it is made concrete and applicable to everyday experience. Pupils may be told or they may read from the book all the rules of hygiene, and afterwards be able to repeat them, and yet not be able to see their application so far as their own lives are concerned. If they do not see this clearly, and do not know the reasons why the laws of health should be obeyed, they may as well remain in ignorance. For example, in the higher grades of the grammar school and in the high school pupils should be led not merely to learn the fact that rapid eating is harmful, but to know why it is harmful; not merely to say that pure air is necessary to health, but to ascertain from measurements whether their own bed-

rooms or schoolrooms are sufficiently supplied with it.

There is not a fact of hygiene connected with school conditions or home conditions which might not be profitably worked out by the pupils themselves. If this practice of applying in our teaching to everyday life the principles of hygiene were universal, there would be in time less reluctance on the part of school authorities to provide all the means possible to insure conditions of health, and parents would not be so willing as many now are to defy all the principles of dietary science.

Speaking of the ignorance of parents respecting food, Mrs. Richards says (25, p. 17): "To my mind, there is but one efficient remedy for this gross ignorance and misapprehension of the office of food, and that is, to have the science of food taught in all our public schools. Make the simple, fundamental, well-known principles of diet a part of the natural science training in the school, add interest and point to the teaching by classes in cooking, not for the sake of the dishes prepared, although they should be well done, but for the sake of the illustrations they give of the principles taught."

The science of food to be taught.

GENERAL HYGIENIC TREATMENT

Having considered the dangers to health to which pupils in school are exposed, we ought next to ascertain exactly what teachers can do to avoid those dangers, and to correct faults which already exist. The first means which suggests itself is physical training.

The chief direct ends of physical training are health and symmetry of body and grace of bodily movements. That these ends are promoted to any

The use of gymnastic exercises and their limitations.

degree by the prevailing gymnastic practice in the schools is seriously questioned by many people. There are doubtless gained by the exercises a certain degree of muscular strength and increased circulation of the blood; but these are not the only nor are they the chief conditions of health most needed for our pupils.

What they most need is recuperation or rest from mental fatigue, and this, it is believed, is not gained by the tenseness of mind required in sharply following the orders of a leader in gymnastics. Teachers, in response to the question as to whether they or the pupils are rested by such exercises, almost invariably answer in the negative; and yet they have grown in favor to such an extent in some places as to constitute the only exercise which the pupils are permitted to have.

Dissatisfaction
with prevailing
methods.

The growing doubt as to their use as a means of promoting health is shown by the changed character of the exercises recommended by directors of gymnasiums. The dissatisfaction with prevailing methods is voiced in the following statement, recently made by a prominent director of physical culture in one of our state normal schools respecting the system in common use: "I believe the classification of exercises in this system to be the most scientific and effective, but I want to protest most earnestly against their application, as so often seen, by which such exercises are a dose of repulsive medicine, instead of the natural, voluntary, joyous response of the child." In other words, the recreative elements of exercise are wanting in many of the gymnastic exercises.

These elements, it is believed, may be supplied in part by a more intelligent application of the prin-

ciples underlying the best systems of gymnastics, and in part by substituting for many of the gymnastic exercises recreative games and plays, in which the response of the children is "natural, voluntary and joyous." To meet successfully the desired ends, the games should be such as to enable all the pupils to join in them voluntarily. They should give abundant opportunity for free, joyous and frequently emulative action. They may be educational in character, or such as will exercise the pupils' powers of observation, imitation, memory and judgment.

Recreative games and plays needed.

To accomplish the best results, it will be necessary for the teacher to direct and oversee the games,* and, if she is sympathetic enough, to participate in them. The games will afford the best opportunity for profitable child study, and for creating in the teacher sympathy with and interest in the children.

It is a cheering sign that in many places the recess, so long abandoned, is being restored, to be spent, not as formerly in rough-and-tumble sports or in aimless idleness, but in well-directed, joyous exercise, which sends the children back to their studies refreshed and ready for work.

The recess being restored.

The following carefully selected list of games†

* Miss Brown, of the Washington, D. C., Normal School (10, p. 631), recommends dividing the class into two or three sections, thus freeing the children from apparent direction by the teacher, and giving her an opportunity to do individual work.

† They are selected from the list of games given and described by Superintendent G. E. Johnson in Vol. III. of the Pedagogical Seminary and from "One Hundred Gymnastic Games" prepared by ten members of the alumni of the Boston Normal School of Gymnastics. These are very valuable contributions to educational literature, and should be within reach of every teacher.

A list of good
games recom-
mended. _

will suggest what may be played by children of different ages. Some of them, as will be seen, are appropriate for the school yard alone, while others can be played in the schoolroom or gymnasium, or, if there is no gymnasium, in the basement playroom. Those marked S. may be played in the schoolroom, and those marked G. in the gymnasium or playroom. The figures indicate the grade of pupils for which the games are best adapted, 1 standing for the primary grade, 2 for the lower grammar, 3 for the upper grammar and 4 for the high school.

Bean bags in a circle, S., G., 1, 2, 3.	Ball stand, G., 3, 4.
All up, S., G., 2, 3, 4.	Bears and cattle, G., 3, 4.
Ball hunt, S., G., 2, 3, 4.	Black and red, G., 3, 4.
Beast, bird or fish, S., 3, 4.	Cat and rat, G., 1, 2, 3, 4.
Call tag, S., 1, 2, 3, 4.	Hunt the fox, G., 1, 2.
Birds, S., G., 1, 2.	Steeple chase, G., 3, 4.
Follow the leader, S., G., 1, 2, 3, 4.	Dodge ball, G., 2, 3, 4.
Ducks fly, S., 1, 2.	Garden scamp, G., 2, 3, 4.
Going to Jerusalem, S., 1, 2, 3, 4.	Hanging cats, G., 1, 2, 3, 4.
Catch ball, S., G., 1, 2, 3.	Jump the shot, G., 1, 2, 3, 4.
Guess ball, S., G., 1, 2, 3, 4.	Lame fox and chickens, G., 1, 2, 3, 4.
Herr Slap Jack, S., G., 1, 2, 3.	Last couple out, G., 3, 4.
Observation, S., 1, 2, 3, 4.	Ninepins, G., 2, 3, 4.
Basket ball, G., 3, 4.	Stealing sticks, G., 3, 4.
Ball and bases, G., 3, 4.	The billed cat, G., 1, 2, 3, 4.
	Three deep, G., 2, 3, 4.
	King's castle, G., 2, 3.
	Fox and geese, G., 2, 3.

All of the above-named games marked "G." and many others, like "I spy," "tag," "duck on the rock," may be played on the playground. There are many games like "geography," "assumed characters," and "authors," which will be found a

valuable help in connection with the regular work of the school.*

In what is said of the importance of games and plays as school exercises, it is not meant that gymnastic exercises have not a distinctly constructive and corrective value, nor is it meant that they should be excluded from the school. Emphasis is here placed upon exercises of recreation and relaxation, because they have to some extent been discontinued in the abandonment of the recess, and because in the strain of school work they are especially needed.

The true value of gymnastic exercises.

In the thirty minutes allowed daily for recesses, fully two-thirds of the time should be given to the wholly recreative exercises. If any more than the remaining time is needed for gymnastics, let it be taken from the time which has been assigned for recitation and study. In school buildings provided with a gymnasium, regular semi-weekly or tri-weekly periods should be set off for systematic exercise in gymnastics,—periods sufficiently long to give opportunity for carefully graded class and individual work.

Time for recreative exercises.

That the effects of systematic physical training are felt in other ways than in promoting bodily health should be realized by every teacher. Dr. Hartwell says (21, p. 510): "If we once admit, as we must admit, that thought and feeling, judgment and volition are inexpressible and ineffectual except through motor acts, and that motor acts are ani-

* In an interesting test, given recently to over 2,000 children, by Mr. Monroe of the Westfield, Mass., Normal School, it was found that 32 per cent. of the favorite games mentioned were ball games; 31 per cent., chase games; and 10 per cent., motion games. Further details of the test are given in (24, p. 1084).

Intellectual
and moral ef-
fects of phys-
ical training.

mated and controlled by the central nervous system, the inference is clear that physical training is an essential element in the development of mental health and power." Of the beneficial effects of games in the intellectual and moral development Dr. Lincoln says (16, p. 71): "These games are well suited to bring out some of the basal traits of character and intellect,—quick sight, dexterity of hand, agility, lung power, voice, speed, endurance, with love of fairness, self-assertion, will-power, social instinct and general experience of unveiled human nature."

SPECIAL AND INDIVIDUAL TREATMENT

Ways of meet-
ing the needs
of individual
pupils.

It is a well-known principle of education that the needs of individual pupils should be met as far as possible. This principle is especially important when applied to physical training. It is applied in every case of eye or ear defect that is observed and treated, and in the case of children who are sent home from school on account of illness. The same principle is recognized in placing defectives in separate schools and classes. In our state institutions for the blind, deaf and feeble-minded it is found very important to give individual treatment to the inmates, especially to those of the feeble-minded school. The same is true with the "abnormally defective" schools and classes already alluded to.

Treatment of
individual
pupils.

In these classes special and individual physical treatment of the pupils, such as manual exercises, baths and gymnastics, is found to be very useful.

As time goes on doubtless the treatment will be still more individualized, with the view of preventing possible moral as well as intellectual ills. We

may well carry this process of individualization still further in the physical treatment of normal-minded pupils who have signs of physical defects, as shown in wrong postures, awkward movements and malformations. A recent movement in Brookline bids fair to do much in this direction. Here those pupils who are found to need corrective exercises are examined by the instructor of physical training, with a view of prescribing daily home and school exercises. In the clinic, which is held for an hour once a week, a careful examination is made of the pupils who are taking the special treatment, for the purpose of ascertaining what progress is made and what change of treatment is needed.

It is on such special and preventive lines of treatment for abnormal children that the schools of the future will more and more work. It will not be, however, until the people believe in a policy of prevention rather than mere restraint and punishment in respect to crime. It may be that society for many years to come will seek to protect itself by means of the pound of retributive cure meted out to criminals; but more and more apparent as time goes on will become the effectiveness of the ounce of prevention in the special treatment of children and youth before the crimes are committed.

Prevention
better than
restraint and
correction.

Already there are signs of an awakening realization of the value of reformative measures in the quite general approval among thinking people of the great work which Mr. Brockway has done during the past few years with the prisoners in Elmira. Here for several years men were treated according to their individual needs by giving them baths, massages, physical and manual exercises, and by providing for them study and useful occupations, with the

Experience in
Elmira, N. Y.

result, as Mr. Sanborn has pointed out,* “of securing the astonishing percentage of more than seven reformations out of every ten persons.” If the value of special hygienic and educational treatment of criminals is thus marked, what cannot be said of the value of such treatment when given to young persons before fixed habits are formed?

To carry out the needed corrective and preventive treatment for abnormal children, as well as the regular constructive work for all, there should be employed, in addition to the usual force, a health officer, called the school physician or director of hygiene, whose duty will be to examine from time to time the pupils, for the purpose of ascertaining which of them need special treatment, and to prescribe what that treatment shall be. His duty also will be to inspect the hygienic conditions of the schools, and to recommend needed improvements. In addition to these duties, he will direct and assist the teachers in carrying on the physical training of the school, both in its educational and in its hygienic aspects.

Thus will be assured in education the same consideration for the body which is now believed to be necessary for the mind. Physical training in its broadest sense will become the business of the school no less in the special correction of existing ills and the prevention of greater ones than in the more general building up of the body. Health of body will be regarded not only as coequal in educational importance with health of mind, but as inextricably bound up with it, both in the processes of education and in the ends of efficient service in the world.

* Papers in Penology, February, 1900, p. 29. Elmira, N. Y.

A health officer
for all the
schools needed.

Health of body
and of mind.

LIST OF BOOKS, REPORTS AND ARTICLES TO WHICH
REFERENCE HAS BEEN MADE IN THE PRECEDING PAGES

1. Kotelmann, Ludwig: *School Hygiene*. Syracuse, N. Y., 1899.
2. Seventh annual report of the Maine State Board of Health. Augusta, Me., 1892.
3. Burrage and Bailey: *School Sanitation and Decoration*. Boston, 1899.
4. Burnham, William H.: *Outlines of School Hygiene in Pedagogical Seminary*, Vol. II., No. 1. Worcester, Mass., 1892.
5. Report of the Public Education Association of Philadelphia, 1900.
6. Clark, T. M.: *Rural School Architecture*. Washington, D. C., 1880.
7. Carpenter, R. C.: article in the *Brickbuilder* for March, 1900. Boston.
8. Woodbridge, S. H.: *Schoolhouse Warming and Ventilation*. Connecticut. School Document, No. 13, 1898.
9. Cambridge, Mass., school report for the year 1899.
10. Proceedings of the National Educational Association for 1898.
11. Eulenberg and Bach: *Schulgesundheitslehre*. Berlin, 1900.
12. Burgerstein and Netolitzky: *Handbuch der Schulhygiene*. Jena, 1895.
13. Report of the Commissioner of Education for 1898-99.
14. Whitcomb, A. K.: *An address upon the Physical Defects of School Children*. Lowell, Mass., 1900.
15. Report of the Chief of District Police and inspection department of Massachusetts for 1891.

16. Lincoln, D. F.: *Sanity of Mind*. Boston, 1900.
17. Warner, Francis: *The Study of Children*. New York, 1897.
18. Rowe, S. H.: *The Physical Nature of the Child*. New York, 1899.
19. Annual report of the superintendent of the Boston public schools. March, 1900.
20. Text-book of Physiology, edited by E. A. Schaefer. New York, 1898.
21. Report of the Commissioner of Education for 1897-98.
22. The Brookline, Mass., Education Society Year Book for 1899-1900.
23. Warner, Francis: *The Nervous System of the Child*. New York, 1900.
24. Proceedings of the National Educational Association for 1899.
25. Richards, Ellen H.: *Sanitary Science in the Home*. Philadelphia, 1888.
26. Six lectures upon school hygiene, delivered under the auspices of the Massachusetts Emergency and Hygiene Association. Boston, 1885.
27. Richards and Woodman: *Air, Water and Food*. New York, 1900.
28. Newsholme, Arthur: *School Hygiene*. Boston, 1901.
29. Shaw, Edward E.: *School Hygiene*. New York, 1901.

General Plan of Studies for Elementary Schools

APPENDIX G.

It is not feasible in a work of this kind to present a plan of studies which can be fully and universally used. The most that may be done is to offer suggestions in respect to helpful programmes of prescribed work and to submit a general scheme which may be a guide for superintendents and others in making definite courses.

It will be the aim here first to give some statistics to supplement and support the theories given in previous pages and afterwards to bring together a few suggestions as to the possible arrangement of studies on lines already laid down.*

In discussing the general features of a course of studies it was said that "the questions involved in making a course of studies are determined by considerations which relate to the child's nature and capacity, and by the ends which are sought to be secured in education." It is fair to presume that these considerations have been the guide of persons in making the courses of studies now in use, and any intelligent presentation of a new course or revision of an old one should be governed, in some degree at least, by the opinions of wise educators everywhere, as embodied in the courses which they have made.

Considerations
determining
a course of
studies.

* For discussion relative to the making of a Course of Studies see pp. 68-124.

With this thought in mind the author caused to be sent to various places in this country blanks calling for significant facts in relation to the courses and programmes then in actual operation. A few of the results of this investigation are given below for the purpose of supporting some of the statements previously made relating to the making of a course of studies.† There are also given some of the results of other investigations made upon the same lines as well as some of the conclusions embodied in well known reports upon courses of studies.

The investigation referred to above related to the courses of studies pursued in sixty cities and towns which might fairly be considered as representative cities and towns of the country. The following table shows the number of cities and towns in which the various subjects are taught and in what grades the subjects are taught. It should be said that in 44 of the 60 places reporting there were 9 grades and in the other 16 places there were only 8 grades.

Table I. Showing the subjects taught in various grades in sixty cities and towns:

TABLE I BRANCHES	Gr.	Gr.	Gr.	Gr.	Gr.	Gr.	Gr.	Gr.	Gr.
	1	2	3	4	5	6	7	8	9
reading.....	60	60	60	60	60	60	60	59	43
writing.....	60	60	60	60	60	59	55	52	36
spelling (lists).....	34	46	53	58	58	58	56	54	38
language and composition...	51	57	60	60	58	55	51	47	41
grammar.....	-	-	-	2	4	15	34	51	40
Latin.....	-	-	-	-	-	1	4	5	12
French or German.....	-	-	-	-	1	1	3	2	3
arithmetic.....	53	59	60	60	59	60	59	57	41
algebra.....	-	-	-	-	-	-	6	11	22
geometry.....	-	-	-	2	4	5	6	8	6
history and biography.....	9	12	15	22	29	32	47	57	39
geography *.....	9	14	23	38	40	40	41	39	24
elem. sci. or nature study...	50	51	52	52	52	51	50	47	37
singing.....	57	58	59	59	59	59	56	56	42
drawing.....	58	58	58	58	59	59	59	58	43
manual training or cooking.	7	5	5	10	13	14	15	13	38

* 41 places reporting, 29 of them having 9 grades.

† A full report of this investigation is given in the Sixtieth,

From the above table it appears that the three R's still hold the most prominent place in all the grades. Singing and drawing are taught in nearly every grade of all schools reported, while spelling and language have almost as good a showing. Geography and history are almost universally taught in the upper grades, and their elements are not neglected in a large proportion of the lower grades. If the supplementary reading in these subjects had been counted there would doubtless have been a better showing in all the lower grades.

Subjects generally included in the course.

The most surprising figures are those given in connection with elementary science or nature study. That more than five-sixths of all the grades below the 8th and a scarcely less proportion in the 8th and 9th grades are receiving instruction in this branch is most gratifying. It will be remembered that elementary science was one of the so-called high school branches recommended in the report of the Committee of Ten. It is believed that it has found its way into a large number of the best schools since the report was made. The other branches recommended, viz., Latin, French or German, algebra and geometry, have not fared so well, and yet more than one-half of the whole number of courses reported have in them one or more of these subjects.

Accompanying the replies from which the above table was made were expressions of opinion from superintendents of schools or principals relating to the success or non-success of the introduction of extra studies in the grammar grades. With few

exceptions the testimony is all in favor of a retention of the studies.

As is well known, the subjects of instruction in England, France and Germany are determined by the central government, and are followed, with minor exceptions, in large and small places alike.

Course followed in English elementary schools.

In England the public elementary schools receive children at the age of 7 years. The course of 7 years following the infant school course includes the following subjects: reading, writing, arithmetic, English, and geography.

English, geography, elementary science and needlework (for girls) are class subjects, but only two of them can be taken, one of which must be English. Drawing and singing may also be taught. Any two of the following subjects may be taken by pupils of standards V., VI., VII. (last three years of the course): algebra, Euclid and mensuration, mechanics, Latin, French, animal physiology, botany, principles of agriculture, physics, domestic economy (for girls).

Course in French elementary schools.

In France the subjects of instruction in the elementary schools (*écoles primaires élémentaires*) are as follows:

1. Subjects and exercises which pertain to physical education, including hygiene, gymnastics, military exercises (without arms), manual training.

2. Subjects which pertain to intellectual education, including reading, writing, French language, history, geography, civics, arithmetic, geometry, drawing, elementary science (animals, plants, minerals, physiology and the elements of physics and chemistry), agriculture, singing.

3. Subjects pertaining to moral education, including the memorizing of poems, and regular talks and

lessons upon duties in the family, in society, and in the state.

The above course covers 7 years, from the age of 6 to 13 years.

The courses of higher schools, the *écoles primaires supérieures* and the *cours complémentaires*, are based directly upon the work done in the lower schools. The first year of these courses corresponds with the 8th or 9th year of our schools and adds algebra and either German or English to the above subjects.

In Germany there are, in general, two kinds of elementary schools, the first and by far the most numerous being the public schools, which are free in most parts of the empire. These schools, known as the people's schools (*Volkschulen*) or community schools (*Gemeinde-schulen*), have a course from 6 to 8 years in length, generally 8, comprising the following subjects: religion, language (German), reading, writing, arithmetic, history, geography, natural history, geometry, physics, drawing, singing and gymnastics. In some places a foreign language (either Latin, French or English) and algebra are added to the course. This course, unlike the elementary school courses in France and America, is not directly connected with the high school courses, inasmuch as the latter courses demand much more foreign language study in the first six or eight years of school life than is given in the common or people's school.

Subjects of instruction in the people's schools of Germany.

The second kind of elementary schools are included in the lower grades of the various kinds of high schools and the preparatory schools (*Vorschulen*), which generally have a course 3 years in length. Upon the supposition that the elementary course in these schools covers a period of 8 years, 3 years in

Courses in preparatory classes and lower classes of high schools in Germany.

the preparatory school and 5 years in the high school proper, the time given to Latin is 5 years; to French or English, 2 to 4 years; and to Greek, 2 years, in addition to the subjects mentioned above. The lower grade of high schools does not teach Greek and the girls' high schools do not teach either Latin or Greek.

Report of the
Committee of
Ten.

The committee appointed by the National Educational Association, known as the "Committee of Ten," recommended in its report of 1893, in respect to subjects not ordinarily pursued in grammar schools, (1) that Latin be begun in the grammar school, (2) that German or French be begun in the 5th year of school and continued through the course of 8 years, (3) that algebraic expressions and symbols be used in simple equations in connection with arithmetic, (4) that concrete geometry be studied from the 5th to the 8th year inclusive, and (5) that natural history and elementary science be taken throughout the course.

Report of the
Committee of
Fifteen.

The report of the Committee of Fifteen, read at the Cleveland meeting of the Department of Superintendence, in 1895, recommended that the following subjects be taught (the figures denote the year of school): reading, 1-8; penmanship, 1-6; spelling lists, 4-6; language and grammar, 1-7; Latin or French or German, 8; arithmetic, 1-6; algebra, 7, 8; geography, 2-8; natural science and hygiene, 1-8; history of United States, 7, 8; Constitution of United States, 8; general history and biography, 1-8; physical culture, 1-8; vocal music, 1-8; drawing, 1-8; manual training, sewing and cooking, 7, 8.

From a review of the courses pursued in the English, French, and German elementary schools and the courses recommended by the Committee of Ten

and the Committee of Fifteen, it will be seen that there is practical unanimity in respect to carrying on, during the whole or a part of the time, reading, language, penmanship (including spelling, composition, writing, and grammar), arithmetic, elementary science or nature study, physiology and hygiene, geography, history.

The points of agreement or disagreement in all other subjects appear in the following table:

Table II. Years given to a foreign language, algebra, geometry and manual training, in English, French, and German courses and in courses recommended by the Committee of Ten and the Committee of Fifteen. Comparative table.

[Letters used to denote the courses are used as follows: E. English Public Elementary School. Fr. French Elementary School. G. V. German People's School. G. G. Lower classes of the German Gymnasium and the Preparatory Department. G. R. Lower classes of the German Real-Gymnasium and the Preparatory Department. G. O. Lower classes of the German Oberrealschul and the Preparatory Department. T. Report of Committee of Ten. F. Report of Committee of Fifteen.]

Latin, . . .	E*	5th, 6th, 7th.
	G. G.	4th to 8th.
	G. R.	4th to 8th.
	T.	Time not given.
	F.	Either Latin, French or German, 8th.
One or more modern languages.	E*	5th, 6th, 7th.
	G. G.	7th, 8th.
	G. R.	6th to 8th, French; 8th, English.
	G. O.	4th to 8th, French; 7th 8th, English.

	T.	5th to 8th, German or French, optional.
	F.	8th, either Latin, French or German.
Algebra . . .	E*	5th, 6th, 7th.
	G. G.	Custom varies as to time and extent.
	G. R.	Custom varies as to time and extent.
	G. O.	Custom varies as to time and extent.
	T.	With arithmetic in latter part of the course.
	F.	7th, 8th.
Geometry . .	E*	5th, 6th, 7th.
	Fr.	All grades.
	G. V.	7th, 8th, constructive and demonstrative.
	G. G.	Custom varies as to time and extent.
	G. R.	Custom varies as to time and extent.
	G. O.	Custom varies as to time and extent.
	T.	One period a week during last 4 years.
Manual Training	E.	Needlework for girls required in all grades.
	Fr.	All grades, — cardboard and wood work for boys; needlework for girls.
	G. V.	Sewing required in higher grades of girls' schools.
	F.	7th, 8th.

* Optional.

TIME LIMITS

In the inquiry alluded to above, information was sought respecting the time devoted in recitation to each subject pursued in the elementary schools. From the daily programmes of 76 schools in as many different municipalities of this country ten typical programmes were selected for careful study and comparison. For convenience of comparison with the results of other investigations the subjects were grouped as follows:

Recitation time for each group of subjects in ten typical programmes.

1. Language, including reading, writing, language lessons, grammar, Latin, French, German.
2. Mathematics, including number work, arithmetic, algebra, and geometry.
3. Literature—history, including literature, civil government biography, and history.
4. Natural science, including nature study, elementary science, and geography.
5. Miscellaneous, including singing, drawing, and manual training.

The following table shows the average percentage of recitation time given in each grade to each of the first four groups of subjects as outlined in the ten typical programmes mentioned above.

TABLE III		Gr.	Gr.	Gr.	Gr.	Gr.	Gr.	Gr.	Gr.	Gr.	Aver-
GROUPS OF STUDIES		1	1	3	4	5	6	7	8	9	age
I. Language.....	65.7	56.0	49.1	34.7	31.5	32.0	34.3	32.5	27.1		40.3
II. Mathematics....	14.4	18.5	17.1	17.6	17.4	18.1	18.5	20.0	25.9		18.6
III. Science.....	12.4	12.1	12.8	21.6	24.5	23.6	22.7	19.4	18.2		18.5
IV. Literature-history	7.4	13.1	20.8	25.8	26.2	25.8	24.2	27.7	28.6		22.1

The percentages contained in the above table may be regarded as a fair average of allotments made in the designated groups of studies in our best schools, and represent some of the best thought of the country respecting the relative value of these groups.

In the report from which the above table is taken a careful review was made of the recommendations in respect to time allotments of the Committee of Ten, and of the Committee of Fifteen. Reference also was made to the Elementary Courses of France and Germany, and to an investigation in California in which the conclusions of educators were sought as to the proportion of time which should be given in each grade to each of the four groups of subjects named above. Several separate tables were made embodying these recommendations and practices, and upon them a careful estimate was made as to the relative time which should be given to each group of subjects in a proposed course. The following table summarizes all the results given in percentages of time allowed for each group of subjects:

TABLE IV PUPIL'S AGE AND GRADE	Group of Studies	CALIFORNIA REPORT						
		Average of 10 courses	Santa Cruz County	Sacra- mento County	Committee of Fifteen	French Schools	German Schools	Proposed Course
Age 5 to 6, called Grade 1 ... in Nine Year's Course.....	I	65.7	50.0	85.0	-	-	-	45
	II	14.4	16.6	5.0	-	-	-	10
	III	12.4	16.6	5.0	-	-	-	30
	IV	7.4	16.6	5.0	-	-	-	15
Age 6 to 7, Grade 1 or Grade 2.....	I	56.0	50.0	50.0	60.9	50.0	55.5	55
	II	18.5	16.6	15.0	9.7	14.2	16.6	15
	III	12.1	16.6	15.0	19.5	14.2	16.6	15
	IV	13.1	16.6	20.0	9.7	21.4	11.1	15
Age 7 to 8, Grade 2 or Grade 3.....	I	49.1	50.0	50.0	60.9	50.0	50.0	50
	II	17.1	16.6	25.0	9.7	14.2	22.2	15
	III	12.8	16.6	10.0	19.5	14.2	16.6	15
	IV	20.8	16.6	15.0	9.7	21.4	11.1	20
Age 8 to 9 Grade 3 or Grade 4.....	I	34.7	33.3	50.0	50.0	41.1	52.3	35
	II	17.6	25.0	20.0	16.6	23.5	19.0	20
	III	21.6	25.0	15.0	23.3	23.5	14.2	20
	IV	25.8	16.6	15.0	10.0	23.5	14.2	25
Age 9 to 10, Grade 4 or Grade 5.....	I	31.5	33.3	50.0	40.0	26.3	31.8	30
	II	17.4	25.0	20.0	14.2	21.0	18.1	20
	III	24.5	25.0	15.0	22.8	21.0	13.6	25
	IV	26.2	16.6	15.0	22.8	31.5	36.3	25

Time for each
group in
various schools
of this and
other
countries.

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Age 10 to 11, Grade 5 or Grade 6.....	I	32.0	33.3	40.0	37.7	26.3	32.0	30
	II	18.1	25.0	25.0	15.7	21.0	16.0	20
	III	23.6	25.0	20.0	23.2	21.0	16.0	25
	IV	25.8	16.6	15.0	23.2	31.5	36.0	25
Age 11 to 12, Grade 6 or Grade 7.....	I	34.3	25.0	40.0	37.7	26.3	28.0	30
	II	18.5	25.0	25.0	15.7	21.0	20.0	20
	III	22.7	25.0	20.0	23.2	21.0	16.0	25
	IV	24.2	25.0	15.0	23.2	31.5	35.6	25
Age 12 to 13, Grade 7 or Grade 8.....	I	32.5	25.0	35.0	18.5	-	28.0	30
	II	20.0	25.0	25.0	18.5	-	24.0	20
	III	19.4	25.0	20.0	18.5	-	16.0	20
	IV	27.7	25.0	20.0	44.4	-	32.0	30
Age 13 to 14, Grade 8 or Grade 9.....	I	27.1	25.0	35.0	18.5	30.4	30	30
	II	25.9	25.0	25.0	18.5	-	26.0	25
	III	18.2	25.0	20.0	18.5	-	17.3	15
	IV	28.6	25.0	20.0	44.4	-	26.0	30

It will be seen that the above table has no reference to the fifth group of subjects which includes singing, drawing, and manual training. To this group of subjects the following percentages may perhaps fairly express the relative time which should be given in each grade: 1st grade, 24; 2d grade, 24; 3d grade, 22; 4th grade, 20; 5th grade, 20; 6th grade, 20; 7th grade, 20; 8th grade, 20.

A readjustment of percentages so as to express the relative percentage of time which should be given to each of all groups of subjects in all the grades gives the following table:

<p><i>Showing the approximate percentage, in a proposed course of studies, of the entire recitation time of a pupil or group of pupils spent in I. Language (including reading, writing, spelling, composition, English grammar and a foreign language), II. Mathematics (including arithmetic, algebra, geometry and book-keeping), III. Elementary science (including nature study, physiology, hygiene and geography), IV. History (including English literature, civil government, biography and history proper), V. Miscellaneous exercises (including singing, drawing and manual training).</i></p>	<p>Approximate percentage of recitation time in a proposed course for elementary schools.</p>
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TABLE V		Sub-	Gr.	Gr.	Gr.	Gr.	Gr.	Gr.	Gr.	Gr.
GROUPS OF STUDIES		prim.	1	2	3	4	5	6	7	8
I. Language.....	29	40	37	28	24	24	24	24	24	24
II. Mathematics.....	6	12	12	15	16	16	16	16	16	20
III. Science.....	20	12	12	15	20	20	20	20	16	12
IV. History.....	10	12	15	20	20	20	20	20	24	24
V. Miscellaneous.....	35*	24	24	22	20	20	20	20	20	20

*Including physical exercises, games, manual training, form study, etc.

The above percentages may be said to represent fairly the present relative value in education of the given groups of subjects as expressed in the most carefully planned courses of study in this country. Besides serving as a basis for further investigations, it is hoped that they will serve a twofold purpose, first, in testing time programmes in present use, and, secondly, in assisting superintendents and teachers to make new programmes. To show a possible use of the table in the latter direction the following time programme is given, in which the number of minutes a week of recitation time is found after subtracting from the entire school time the time given to opening exercises, to study or busy work and to recesses and physical exercises, the school day being 5½ hours long and there being 5 days in the week.

Time programme, showing the number of minutes a week spent in recitation by a pupil or group of pupils in five groups of subjects; also the number of minutes a week given to opening exercises and recesses and to study in school.

TABLE VI		Sub-	Gr.	Gr.	Gr.	Gr.	Gr.	Gr.	Gr.	Gr.
GROUPS OF STUDIES		prim.	1	2	3	4	5	6	7	8
I. Language.....	325	360	333	273	234	240	240	240	276	276
II. Mathematics....	75	108	108	146	156	160	160	160	184	230
III. Elem. Sci.	225	108	108	146	195	200	200	200	184	138
IV. Hist. & Lit.	125	108	135	195	195	200	200	200	276	276
V. Misc.....	450†	216	216	215	195	200	200	200	230	230
Opening exercises, physical exercises and recesses.....	—	250	250	225	225	200	200	200	200	200
Study in school.....	—	500	500	450	450	450	450	450	300	300
Total school time.	1,200	1,650	1,650	1,650	1,650	1,650	1,650	1,650	1,650	1,650

*Figures in this column indicate the number of minutes spent in recitation and busy work taken together.

†Including physical exercises, games, kindergarten occupations, etc.

Actual time to
be spent in $\frac{1}{2}$ h
each group of
subjects.

The recitation time indicated in the above programme is intended to include the time more or less of which is spent under the direction of the teacher, or which is spent in quiet work by the pupil, as in some language work, nature study, drawing and writing. The study time includes only the time that is spent by the pupil without direction or aid from the teacher.

Of course the time allowed for busy work or study will depend upon the number of sections or groups in which the recitations are heard. The above time programme is made on the supposition that the class or school is divided into three sections in the first and second grades and into two sections in all other grades, and that in some of the exercises the three or two sections recite together.

A re-arrangement of the above table so as to include literature in the language group changes the percentages in the first and fourth group as shown in the following table:

<p><i>Showing the approximate percentage, in a proposed course of studies, of the entire recitation time of a pupil or group of pupils spent in</i></p> <p><i>I. Language (including reading, writing, spelling, composition, English grammar and literature and a foreign language),</i></p> <p><i>II. Mathematics (including arithmetic, algebra, geometry and bookkeeping),</i></p> <p><i>III. Elementary science (including nature study, physiology, hygiene and geography),</i></p> <p><i>IV. History (including civil government, biography and history proper),</i></p> <p><i>V. Miscellaneous exercises (including singing, drawing and manual training).</i></p>	<p>Percentage of time with literature included in the language group.</p>
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TABLE VII.	Sub- pri.	Gr. 1	Gr. 2	Gr. 3	Gr. 4	Gr. 5	Gr. 6	Gr. 7	Gr. 8
I. Language . . .	29.0	42.0	42.0	38.0	32.0	32.0	32.0	33.0	33.0
II. Mathematics .	6.0	12.0	12.0	15.0	16.0	16.0	16.0	16.0	20.0
III. Science	20.0	12.0	12.0	15.0	20.0	20.0	20.0	16.0	12.0
IV. History	10.0	10.0	10.0	10.0	12.0	12.0	12.0	15.0	15.0
VI. Miscellaneous	35.0*	24.0	24.0	22.0	20.0	20.0	20.0	20.0	20.0

*Including physical exercises, games, manual training, form study, etc.

It should be understood that the figures in the above tables indicate the average for the year, so that if, as is likely to be the case, it is desired to limit the number of studies pursued at any one time to three or four, the aggregate number of minutes and the average percentage of time for the year will be the same as indicated although at a given time there may be a greater or less number in given studies. For example, if it is decided to carry on geography in the 6th grade only fifteen weeks of the year, (40 weeks) the *average* weekly time spent upon that subject will be determined by multiplying the number of minutes spent a day by 15 and dividing the product of these numbers by 40.

SUGGESTED COURSE OF STUDIES FOR A SUB-PRIMARY CLASS ADMITTING CHILDREN FIVE YEARS OF AGE

Suggested course for a sub-primary class.

Language and Literature.—(Time spent daily in recitation and busy work for a single group of pupils, about 90 minutes.) Story telling,—selections from kindergarten stories, myths and fairy tales. Reading of words in sentences on blackboard and chart and on picture slips. Reading sentences from blackboard and chart and on picture slips. Phonic drill. Some analysis and synthesis by sounds. Writing on tracing slips, blackboard and paper. Large movements.

Number and Form.—(Time spent daily, about 15 minutes.) Fourth and fifth kindergarten gifts for counting and combining.

Nature Study.—(Time spent daily, about 45 minutes.) Recognition of common plants and trees, and their principal parts. Observation of and talks about familiar domestic animals and birds. Some resemblances and differences noted. Adaptation of parts to uses observed.

Physical and Manual Exercises.—(Time spent daily, about 90 minutes.) Plays, games and calisthenics. Kindergarten occupations, including sewing, weaving, cutting, folding, peas-work, clay-modeling, bead-stringing, chain-making, drawing, painting, sketching from memory and imagination, kindergarten and nursery songs.

OUTLINE OF A COURSE OF STUDIES FOR PRIMARY AND GRAMMAR SCHOOLS

The following outline suggests a possible adjustment of primary and grammar school work to the conditions indicated. While it is probably insufficient to meet fully the needs of any system of schools, it is hoped that it will fulfill in some degree the requirements of a general course, upon which more detailed courses may be constructed suited to various localities and conditions. The absence of repeated directions to review previous work and to follow proper lines of teaching indicates the presumption of professional ability on the part of teachers. A course of studies is not a manual relating to methods and theories of teaching, however useful such a statement of methods and theories may be for some teachers. Happy is it for those schools whose courses of studies may presuppose the employment of teachers whose knowledge of the principles of teaching is undoubted, and whose judgment is fully trusted in the selection of mate-

Outline of a course for primary and grammar schools.

rials within the bounds of an outline not greatly extended.

It should be understood that this course is intended for pupils who enter school at six years of age, and who come either from the kindergarten or sub-primary class. Some pupils who have taken the course outlined for the sub-primary class may be able to take the work outlined for the 1st grade in less than a year.

The figures in the left-hand column indicate the year and semester during which the work in parallel columns is supposed to be done. For example, 2¹ means the first-half of the second year. The figures in decimals above each year's outline of work denote the approximate percentage of recitation time which a pupil or group of pupils should give to the allotted group of subjects. These figures are taken from Table VI., page 372.

Course of Studies
for
Primary and Grammar Schools

GROUP I. (42)

- Grade (a) Reading and literature (b) Writing
and
Semester. (c) Oral and written Composition and Spelling.
(d) Memory work.
(e) Grammar.

- (a) Words and sentences from blackboard, chart and reader.
Analysis and synthesis of words by sound.
Careful selection of folklore and fairy stories told by the teacher. (See list of books)

1

- (b) Copying words and sentences from blackboard and slips. Copying single letters.

- (c) Telling of stories told or read.

- (d) Learning and reciting of short pieces—a minimum average of two lines a day.

- (a) Reading easier pieces of four or more first readers.
Analysis and synthesis of words by sound and letter.
Stories continued.

- (b) Copying sentences from models and writing from dictation.
Correct forms of single letters taught.

2

- (c) Telling of stories told or read. Dictation of short sentences. Teach pupils to write their name; school; town; father's (Mr.) name; mother's (Mrs.) name; teacher's name. Period and question mark.

- (d) Learning and reciting of short pieces. Review first half year's work frequently—minimum as before.

GROUP II.

- (a) Arithmetic.
(b) Form and geometrical Exercises.
(c) Algebra.
(d) Book-keeping.

- (a) Combinations of numbers to ten with and without objects. Oral work only during first ten weeks. Original story problems. Use terms one-half and one-fourth as fractional parts of numbers. Teach quart and pint.

- (b) General comparison of blocks in size—blocks being from one to ten inches in length and one inch square at base.

- (a) Combinations of numbers to twenty with and without objects.
Teach dozen, quart, gallon, pint, gill, dime, foot, inch.
Fractional parts of numbers (one-half, one-third, etc.)
Original and fractional problems.
(b) Comparison of edges and surfaces of inch cube with those of other blocks (one-half, one-third, etc.)

GROUP III. (.12)

-) Nature study and Elementary science
-) Geography
-) Physiology and hygiene.

) Recognition of common plants and trees. Teach principal parts.
Observe flesh-eating animals (dog, cat) for habits and adaptation of parts to habits; pictures of unfamiliar animals for comparison.
) Uses of plants and their parts.
Uses of animals and their parts to man. Animal productions.
) Simple talks upon playing, sleeping, eating; also upon clothing and home-life.

) Recognition of common rocks.
Buds observed. Naming of common plants and trees.

) Uses of rocks to man.
Mineral productions.
Uses of plants and trees and their parts.
Vegetable productions.
) Talks upon school life and streets.
Talks upon body as a whole, parts, habits, etc.

GROUP IV. (.10)

- (a) History and biography
- (b) Civil Government.

(a) The telling of carefully selected folklore and fairy stories in connection with the work in literature.

(a) The telling of carefully selected folklore and fairy stories in connection with the work in literature.

GROUP V. (.24)

- (a) Drawing and art.
- (b) Manual training
- (c) Singing.

(a) Free illustrative sketching from memory and imagination. The solar spectrum for color study of pictures for story.

(b) Paper folding and kindergarten weaving.

(c) Breathing and phonic exercises.
Dictation and memory exercises. Tone building on music ladder (not above fifth tone).
Rote singing

(a) Blackboard drawing, free movement. Straight lines and curves.
Drawing from nature simple grasses and flowers using colored crayons.
Six standard colors
(b) Tape and rug weaving.
Rafia braiding and sewing

(c) Breathing and phonic Exercises
Tone building
Rote singing

GROUP I. (.42)

Grade and Semester. (a) Selections in the order of difficulty from several first readers. Telling and reading of carefully selected folklore and fairy stories. Analysis and synthesis of words continued.

(b) Copying and writing from dictation. Practice upon forms of single letters, if needed. Oral and written compositions (reproductions, etc.) daily. Common abbreviations Uses of Capitals. Dictations for correct form of words, of spelling, etc. Memory work reviewed and continued.

(a) Easier portions of several second readers. Telling and reading folklore and fairy stories continued. Daily phonic drill for enunciation and word building.

(b) Copying and writing from dictation with pen and ink. Teach correct forms of single letters, if needed.

(c) Oral and written compositions (reproductions, etc.) daily. Dictation for teaching use of capitals, common abbreviations, period, interrogation and exclamation mark. Spelling of common words.

(d) Memory work reviewed and continued.

GROUP II. (.12)

(a) Numbers from one to one hundred:—
 (1) Combinations of tens and of tens with other numbers.
 (2) All combinations to fifty, no added or subtracted number or multiplier or divisor to be greater than ten.
 (3) Application to familiar weights and measures. Comparisons in problems.
 (4) Fractional parts of numbers.
 (5) Original problems.
 (6) Volumes and surfaces of inch cube and two inch cube compared. Perimeters of inch cube and of other cubes compared.

(a) Numbers from 1 to 100:—
 (1) All combinations, the added or subtracted number or multiplier or divisor to be at first not greater than 10—afterward greater than 10.
 (2) Applications to familiar weights and measures. Comparisons in problems.
 (3) Fractional parts of numbers
 (4) Original problems
 (b) Comparison in size of prisma each of whose bases is one inch square. Comparison of surfaces of same prisma

GROUP III. (.12)

Common plants and trees recognized and named; observe grass eating animals (cow, horse, sheep) for habits and adaptation of parts to habits. Use pictures of unfamiliar animals of same class for comparison.

Useful vegetable and animal productions. Location of plants observed. Position, direction and relative distances

Simple lessons continued with playing, eating, sleeping, clothing and life in the home and school room.

History of plant life from seed to seed. Observe bean and pea. Plant several kinds of seeds for observation and comparison. Observe and name common plants and trees of neighborhood and cultivated plants. Plants and parts used for food and clothing. Use of seeds to man. Forms of water. Direction and distance applied to familiar bodies of land and water. Animal and vegetable productions of the town.

Lessons upon use and care of five senses. Special exercises to develop each sense.

GROUP IV. (.10)

(a) Telling and reading of stories adapted to maturity and needs of children. Select with reference to season and to what is done in nature study and reading. (See list of books.)

(a) Telling and reading of stories. Select with reference to capacity of children, to the season and to what is done in nature study and reading. (See list of books.)

GROUP V. (.24)

(a) Illustrative drawing
Study of pictures for story
Memory and imagination
sketches with help of live objects. (birds and animals)
Six standard colors with water colors.

(b) Paper folding and cutting.
Rafia weaving, braiding and sewing.

(c) Breathing and phonic exercises.
Tone building
Rote singing.

(a) Blackboard drawing; related curves and straight lines.
Drawing from nature simple grasses and flowers, using water colors.

(b) Ruling lines of definite lengths and divisions.
Cutting to line with scissors.
Rafia weaving, braiding and sewing.
Garden work.

(c) Breathing and phonic exercises.
Tone building
Rote singing

GROUP I. (.38)

Grade (a) Difficult portions of second readers
and and carefully selected folklore, fairy
Semester. tales and myths.

(b) Copying and writing from dictation.

3¹ (c) Daily composition (oral and written)
and dictation exercises. Attention
given to abbreviations, spelling,
punctuation, use of correct words and
correct forms of words.

(d) Pieces of previous year reviewed.
Carefully selected prose and poetry
continued.

(a) Third readers and books of cor-
responding grade. Selected stories
continued. (See list of books.)

(b) Copying and writing from dictation.

3² (c) Daily composition and dictation
exercises. Attention given to spell-
ing, punctuation, use of capitals,
choice of words and forms of words;
also to clearness and originality.

(d) Memory work reviewed and con-
tinued.

GROUP II. (.15)

(a) Numbers to 1,000.

(1) Addition, subtraction, multipli-
cation and division, with and without
objects.

(2) Applications to familiar weights
and measures.

(3) Comparison of weights and meas-
ures with different units.

(4) Original problems

(b) Comparison of surfaces of cubes and
prisms with surface of inch cube.
Comparison of perimeter of known
surfaces with perimeter of square
inch.

(a) Numbers to 1,000.

(1) All operations.

(2) Applications in common weights
and measures with comparisons.

(3) Original problems.

(b) Measurements of familiar surfaces
and practical applications. Com-
parisons with various units.

GROUP III. (15)

- (a) Recognizing and naming common plants and trees and grouping according to habitat.

- (b) Home geography including local surroundings and industries. Facts relating to surface, soil, and productions. Primitive peoples and occupations.

- (c) Previous work reviewed. Lessons connected with playing, working, resting, eating, clothing and cleanliness. Comparison of parts of body with corresponding parts in lower animals. Adaptation of each part to special use.

GROUP IV. (.10)

- (a) (1) Stories connected with history of town and neighborhood, pioneers and traditions.

(2) Thanksgiving and Christmas celebrations

GROUP V. (.22)

- (a) Free-hand drawing of plants and other common objects. Hues of color by means of colored papers and in washes.

- (b) Garden work
Rafia work in baskets, mats, dolls' hats, etc.

- (c) Breathing, phonic dictation and memory exercises continued. Tone building in music ladder. All tones of scale. Rote singing.

- (a) (1) Study birds for habits and adaptation of parts to habits. Comparative study of feathers.

(2) Changes in plant and animal life in spring. Grouping of plants according to habitat; time of appearance, etc. Life history of corn compared with bean and pea.

- (b) Home geography continued. Study of the world as a whole, including land and water surfaces.

Weather record
Making of plans and maps. Topics relating to history and nature study requirements.

- (c) As in first half

- (a) (1) Stories of local history and pioneer life continued.

(2) Celebration of Washington's birthday and battles of Lexington and Concord.

- (a) Illustrative drawing
Drawing of animals in ink, silhouette or color. Harmonious arrangement of one color with black, white or grey.

Drawing of grasses, leaves and flowers from nature in color. Use of floral elements in borders or surface patterns in color.

Original designs

- (b) Cutting units of design
Rafia work in baskets, napkin rings, mats, dolls' hats etc.

- (c) Breathing, phonic and tone exercises continued. Rote singing. Study of notes, rests, etc. Keys of C and G. Two part exercises and songs.

GROUP I. (.32)

Grade (a) Literature and information reading and writing suited to the interest and capacity of pupils. (See list of books.)
Semester.

(b) Instruction to pupils who need it.

4¹

(c) Daily and weekly composition and dictation exercises, giving attention to spelling, punctuation, use of capitals, choice and forms of words: also clearness conciseness, originality and fluency of expression.

(d) Memory work reviewed and continued.

(a) Literature and information reading suited to the interest and capacity of pupils. (See list of books.)

(b) Instruction to pupils who need it.

4²

(c) Daily and weekly composition and dictation exercises continued.

(d) Memory work reviewed and continued.

GROUP II. (.16)

- (a) (1) Integers to one million. Addition, subtraction multiplication and division.
(2) Common fractions; halves, fourths, eighths, thirds, sixths, twelfths.
(3) Simple business transactions.
(4) Common weights and measures
(5) Comparisons with various units.

(b) Angles, and areas of rectangles and other parallelograms.

- (a) (1) Integers unlimited.
(2) Common fractions to twelfths, decimal fractions to hundredths.
(3) Applications in simple business transactions and in common weights and measures.
(4) Comparisons in examples and problems with various units.

(b) Areas of triangles and practical applications.

GROUP III. (.20)

- (a) (1) Plant and its parts: parts of leaves and flowers; change of flowers to fruit and seed.

(2) Animals: recognition, habits and adaptation of parts. Cycle of animal life as shown in frog; grouping of known animals.

- (b) Local physiography and local commerce.

Topics of home life; manufacturing plants.

Topics suggested by nature study and history requirements.

- (c) Previous work reviewed and continued. Lessons upon occupations in various kinds of climate and need of pure air in sleeping rooms.

Lessons upon good and bad kinds of food and drink.

- (a) (1) Pebbles, sand and clay with reference to life history of rocks. Observe crystals and show how they may be found.

(2) Effect of heat on water and air.

(3) Recognition of plants. Changes in nature and their relation to plants, animals and man.

(4) Movement and changes in moon. Observe star groups.

- (b) (1) General topics upon North America.

United States as a whole and in sections by topics. State and town by topics. Topics related to history requirements.

(2) Special lessons on climate.

- (c) Previous work reviewed and continued

Lessons upon proper kind of clothing, ventilation, heating, lighting, water supply and sewerage.

Lessons upon good and bad personal habits, and avoidance of disease.

GROUP IV. (.12)

- (a) (1) Telling and reading of stories connected with discoveries and explorers, especially of the home state and neighboring states.

(2) National stories connected with history of Judea, Egypt and Greece.

- (a) (1) Stories connected with early home history continued.

(2) National stories connected with history of Rome and England,

GROUP V. (.20)

- (a) (1) Free-hand drawing in any appropriate medium of plants, fruits and other objects (spherical). Analysis of leaves and flowers for color schemes.

(2) Study of famous paintings for center of interest and emphasis.

Tint and shades in water color

Original designs.

- (b) Accurate drawings with ruler involving $\frac{1}{2}$ ", $\frac{1}{4}$ ", $\frac{1}{8}$ ", and cutting in cardboard.

Simple constructive designs

Card picture frames and the like, of good proportions

Basket, hat and rug making

- (c) Breathing and tone exercises. Exercises and songs in key of C. G. and F.

Two part songs.

- (a) Drawings in mass of animals and children in interesting attitudes.

Drawings in any appropriate medium of leaves and flowers from nature. Application in border and surface patterns in color. Study of tints and shades of one color in design.

- (b) Cutting of geometric forms in thin wood.

Making of useful articles in cardboard

Garden work

- (c) Breathing and tone exercises and songs in key of C. G. and F.

GROUP I. (.32)

Grade (a) Literature suited to the interest and
and capacity of pupils. (See list of books.)
Semester. Information reading with reference to
requirements in history, geography
and nature study. (See list of books.)

GROUP II. (.16)

(a) (1) Common fraction:—Addition, subtraction, multiplication and division; decimal fractions to thousandths all operations.

(2) Applications and comparisons with common weights and measures and in business transactions.

(b) Kinds and areas of polygons.

(b) Instruction for those who need it.

(c) Daily and weekly composition and dictation exercises continued. (See outline for grade IV.)

(d) Memory work reviewed and continued.

(a) Literature suited to the interest and capacity of pupils. (See list of books).

Information reading with reference to the requirements in history, geography and nature study. (See list of books.)

(a) (1) Common and decimal fractions: all operations unlimited.

(2) Applications and comparisons in business transactions.

(b) Instruction for those who need it.

(b) Areas of surfaces of cube prism and square pyramid.

(c) Daily and weekly composition and dictation exercises continued. (See outline for Grade IV.)

(d) Memory work reviewed and continued.

GROUP III. (.20)

- (a) Plants and parts continued, emphasizing roots and stems.
Study of leaves and barks of trees. Grouping of plants.
Study of rock forming minerals, quartz, mica, feldspar, etc. Building stones.
Motion and pressure in solids, water and air.
- (h) Topics upon the United States. Types of mountain, lake and river systems. Types of natural productions.
Topics related to history and nature study requirements.
- (c) Use and care of skin, nails, hair, and sense organs. Effects of alcohol and tobacco. •

GROUP IV. (.12)

- (a) (1) Spanish and Portuguese explorers and settlers in America.
(2) Stories connected with history of Spain and Portugal.

GROUP V. (.20)

- (a) (1) Free-hand drawing any medium of plants, fruits and simple spherical and cylindrical objects. Analysis of leaves and flowers for color schemes.
(2) Study of famous paintings for centre of interest and emphasis. Subordination accessories. Hues in water color.
- (b) Modifications of polygons for objects of silk reel, badge, etc. Construction in appropriate material.
Making of common useful articles in card, wood or iron.
- (c) Breathing and tone exercises continued.
Work in chromatic intervals.
Exercises and songs in all keys.

- (a) (1) Minerals continued. Continue study of changes in heat on water and air. Apply to phenomena of seasons. Changes in position of sun.

(2) Insects: study of one for type of insect life,—grasshopper or butterfly; adaptation of parts to habits; metamorphosis. Relation of known insects to man as useful or injurious.

- (b) United States continued.

Types of climate, trade centres, occupations and manufacturing centres.
Topics related to history requirements.

- (c) Previous work reviewed. Description, use and care of muscles, bones, joints, nerves and brain. Effects of alcohol and tobacco

- (a) (1) English and Dutch explorers and settlers in America
(2) Stories connected with the history of England and France.

- (a) (1) Drawings in mass of animals and children in interesting attitudes.

(2) Illustrative drawing in other studies. Study of analogous coloring; related hues in design.

(3) Drawings of plants and insects from nature in any appropriate medium. Arrangement in spaces, applications in borders, surface patterns and rosettes in color.

- (b) Development of surface of pyramids in cardboard. Applications in thin wood. Wood or metal working in making common useful articles.

- (c) Breathing and tone exercises continued.
Exercises and songs in all keys.

GROUP I. (.32)

Grade (a) Literature suited to the interest and
and capacity of pupils. (See list of books.)
Semester. Information reading with reference to
requirements in history, geography
and nature study. (See list of books.)

(b) Instruction for those who need it.

(c) Daily and weekly composition
and dictation exercises continued.
(See outline for Grade IV.)

(d) Memory work reviewed and con-
tinued.

(a) Literature suited to the interest
and capacity of pupils. (See list of
books.)
Information reading with reference
to requirements in history, geography,
and nature study. (See list of books.)

(b) Instruction for those who need it.

(c) Daily and weekly composition
and dictation exercises continued.
(See outline for Grade IV.)
(d) Memory work reviewed and con-
tinued.

GROUP II. (.16)

(a) (1) Metric system of weights and
measures and applications.
(2) Percentage and simple applica-
tions in business problems.

(b) Solid contents of cubes and rec-
tangular prisms, with application in
practical problems.

(a) (1) Practical problems in denom-
inate numbers, using the common
and metric systems.
(2) Business transactions and ac-
counts.

(b) Measurements of circles.
Areas of surfaces of prisms and
cylinders.

Group III. (.20)

- (a) (1) Study of trees, fruits and dispersion of seeds.
Grouping of plants
- (2) Study of common metals and their ores—iron, copper, etc.
- (3) Observation of birds as to habits, etc.

- (b) Historical associations and commerce of the great cities of United States.
Great traffic routes
Industrial and commercial development of various sections of U. S.
Topics related to history requirements

- (c) Uses of food. Proper foods and drinks. Habits of eating and drinking.
Digestive tract—parts, use and care. Effects of alcohol and tobacco.

- (a) (1) Combined effects of heat and gravity on water and air, absorption, transfer and radiation of heat by solids and liquids.
- (2) Comparison of parts of birds with corresponding parts of vertebrates.
- (3) Clusters of flowers in maple, elm, horse chestnut, oaks and birches; tree fruits.

- * (b) Canada and Mexico
Distribution of races in North America; glacial period in N. America
Mathematical geography relating to change of seasons, day and night, isothermal lines, tides.
Topics relating to history requirements.

- (c) Description of parts and uses of lungs and related organs. Breathing exercises. Ventilation.
Effects of tobacco and alcohol
Description and uses of heart and blood vessels.
Circulation. Effects of air. Exercise and clothing. Cuts and wounds.
Effects of tobacco and alcohol.

GROUP IV. (.12)

- (a) (1) Colonial history of Virginia, New York and Pennsylvania. Chief events and stories of principal persons.
- (2) Persian Wars
Grecian history. Stories of Marathon, Platea and Salamis.

- (a) (1) Colonial history of Massachusetts: chief events and stories of principal persons.
European wars related to America.
- (2) Roman history:
The Punic Wars
The Scipios

GROUP V. (.20)

- (a) (1) Drawing in any medium of plants and common objects. Analysis of leaves and flowers for color schemes.
- (2) Study of famous paintings for centre of interest and emphasis, grouping of accessories for leading lines.
- (3) Working drawings in connection with industrial work.
- (b) Wood and card work for boys from working drawings.
Sewing and cooking for girls.

- (c) Three part exercises and songs.
Introduction of minor scales.

- (a) (1) Drawings in mass of animals and children in interesting attitudes. Illustrative drawing in other studies. Study of analogous coloring, related lines, in design.
- (2) Plant forms in appropriate medium. Arrangements in spaces of different shapes. Applications in borders, surfaces, rosettes, etc., in color.
- (b) Wood and card work for boys from working drawings.
Sewing and cooking for girls.

- (c) Previous exercises continued.

GROUP I. (.33)

- Grade (a) Literature suited to the interest and capacity of pupils. (See list of books).
 and
 Semes- Information reading with reference to requirements in history, geography and nature study. (See list of books).
 ter.

GROUP II. (16)

- (a) Insurance, commission, profit and loss, taxes, duties, interest.

- (b) Measurements and problems relating to angles and areas of surfaces of pyramid and cone.

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- (c) Daily and weekly composition and dictation exercises. (See outline for Grade IV.)

- (d) Memory work reviewed and continued.

- (e) Ideas and words. Thoughts and sentences. The Sentence. Kinds of Sentences with respect to meaning. Parts of speech: General uses, definitions and applications.

- (a) Literature suited to the interest and capacity of pupils. (See list of books.) Information reading with reference to requirements in history, geography and nature study. (See list of books.)

- (a) Business transactions and accounts involving problems in banking, stocks, and bonds, etc.
 Ratio and proportion.

- (b) Solid contents of cylinder, pyramid, cone, sphere and frustum of pyramid and cone.

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- (c) Daily and weekly composition and dictation exercises. (See outline for Grade IV.)

- (d) Memory work reviewed and continued.

- (e) Subject and predicate: objects and complements. Phrases, clauses and sentences. Kinds of sentences in respect to form.

GROUP III. (.16)

- (a) Composite family of grasses and grains. Coal; combustion and candle flame products.
- (b) Topical study of Germany, Holland, Austria and British Empire and colonial possessions. Topics related to history requirements.
- (c) Home hygiene in respect to bathing, clothing, care of eyes, sleep and recreations. Emergencies in bandaging and splinting, convulsions and unconsciousness. Structure of lungs. Effects of respiration upon air and blood. Generation of heat in body.

GROUP IV. (.15)

- (a) Topical study:
(1) Colonial history of U. S. Causes of revolution traced from the beginning.
(2) Chief events of reformation in Continental Europe and puritan reformation in England.
- (b) Local town and county governments. Officials by whom chosen, duties, etc. State government: Branches; function of each branch; Officials; —by whom chosen, terms, duties, etc.
- (a) Topical study in U. S.:
(1) Chief events from 1775 through Madison's administration
(2) Chief events of Roman Empire and French revolution.
- (b) Topical study of State government continued. Topical study of United States government: Branches; function of each branch; officials, qualifications, terms, duties, etc.

GROUP V. (.20)

- (a) (1) Drawing in any medium of plants and common objects. Illustrative drawing in other studies. Analysis of beautifully colored objects for color schemes.
(2) Study of famous paintings for composition of line and of light and shade or mass.
- (b) Wood working for boys from working drawings. Needle work for girls.
- (c) Previous exercises continued.
- (a) (1) Drawing in any medium of children in interesting attitudes and of details of interior of room. Free-hand perspective. Story of Christian architecture and ornament.
(2) Adaptation of natural forms to purposes of decorative designs. Applications to initials, head and tail pieces, etc. in black and white and color. Complementary colors in designs.
- (b) Wood working for boys from working drawings. Needle work for girls.
- (c) Previous exercises continued.

- (a) Typical marine animals: starfish, oyster or clam, lobster or crab. Compare with vertebrates (fish). Rose family. Composition of air, water and various foods. Some principles of acoustics.
- (b) Topics upon Russian Empire, Norway, Sweden, Denmark, Italy, France, Belgium. Topics related to history requirements.
- (c) Home hygiene in respect to preparation of food, habits of eating and drinking, care of lungs. Effects of dust, standing water, refuse and noxious gases. Disinfection. Care of invalids. Emergencies in choking and accidental poisoning, drowning, suffocation, etc.

GROUP I. (.33)

- Grade (a) Literature suited to the interest and
and capacity of pupils. (See list of
Semester. books.)
Information reading with reference
to requirements in history, geog-
raphy and nature study. (See list of
books.)

GROUP II. (.20)

- (a) Definitions, rules and formulas.
Miscellaneous exercises.

- (b) Definitions, problems and theo-
rems relating to angles, lines, and
sides and areas of triangles and of
parallelograms.

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- (c) Daily and weekly composition and
dictation exercises. (See outline
for Grade IV.)

- (c) Algebraic notation and simple
problems. Addition, subtraction,
multiplication, division and factor-
ing.

- (d) Memory work reviewed and con-
tinued.

- (e) Kinds, forms and uses of nouns,
pronouns, adjectives, verbs, adverbs,
prepositions and conjunctions.

- (a) Literature suited to the interest
and capacity of pupils. (See list of
books.)
Information reading with reference
to requirements in history, geog-
raphy and nature study. (See list
of books.)

- (a) Definitions, rules and formulas.
Miscellaneous exercises.

- (b) Definitions, problems and theo-
rems relating to circles and similar
polygons, and to prisms, pyramids,
spheres, cylinders and cones.

8²

- (a) Daily and weekly composition and
dictation exercises. (See outline
for Grade IV.)

- (c) Reduction of fractions. Resolv-
ing of equations, with two un-
known quantities, involution and evo-
lution.

- (d) Simple form of accounts.

- (d) Memory work reviewed and con-
tinued.

- (e) Rules of syntax and applications.
Analysis of sentences.

GROUP III. (.12)

- (a) (1) Poisonous plants and trees
(2) Cohesion, gravity and heat

- (b) (1) Topics upon countries and colonies in Africa and South America.
(2) Comparative study of climate and climatic influences and of vegetation in different latitudes and conditions.

- (c) Public hygiene: Relation of personal, home and school hygiene to public health. Requirements of pure food, water and air. Protection from disease, alcohol and other poisons. Boards of health. Protection and adulteration of food supply. Protection of water supply. Means of prevention of water from pollution.

- (a) (1) Sight, Sound and Electricity.
(2) Injurious insects; time and method of extermination.

- (b) (1) Topics upon countries of Southern Europe. Japan and Chinese Empire.
Comparative study of winds and their effects—and of states of society.

- (c) Public hygiene: Dangers from impure air. Protection from impure air. Sanitary regulations for public buildings. Plumbing. Removal of garbage

GROUP IV. (.15)

- (a) (1) Topical study of U. S. history from 1815 to present time.
(2) English in India and Africa. Revolt of Spanish American provinces. Greek wars of independence.

- (b) Topical study of U. S. government continued. Election and appointment of officials. Terms of office and duties of officials. Civil service. Principles and basis of local government. Duties of citizens. Local questions discussed

- (a) (1) Topical general reviews such as American Indians; negro slavery; political parties; inventions; growth of territory; the tariff; growth of industries; territorial expansion; civil service reform. Questions connected with current events.

- (2) Union of German and Italian States. Revolt of Spanish American provinces. Greek wars of independence.

- (b) Principles of state government: basis; object of laws; relation of each branch to each other; duties of citizens and of officials; state questions discussed. Principles of national government: the constitution; national questions; rights and duties of nations; war and arbitration.

GROUP V. (.20)

- (a) (1) Drawing in any medium of common objects. Illustrative drawings in other studies. Analysis of beautifully colored natural objects for color schemes.

- (2) Study of famous paintings for composition of line and of mass.
(b) Gardening and work of previous grades continued.

- (c) Previous exercises continued.

- (a) (1) Drawings in any medium of children in interesting attitudes, and of details of interiors of buildings. Freehand perspective. Story of pre-Christian architecture and ornament.

- (2) Adaptation of natural forms to purposes of decorative design. Applications in book covers, title pages, etc. Complementary groups of colors in design.

- (b) Work of Seventh grade continued.

- (c) Previous exercises continued.

and sewerage. Regulations concerning stables, etc. Dangerous and offensive employments. Protection from contagion. Care and isolation of the sick. Special school hygiene. Protection from alcohol and other poisons.

LIST OF BOOKS

Following are the list of books to which reference has been made in the foregoing course of studies. It is difficult to draw the line between books of literature and books of information. Some of the books classed as literature may not properly belong there by a strict definition of that term, and some belonging under both heads are for the sake of brevity placed under only one. Many of the books assigned to one class of pupils may with profit be used in other classes. Those books designated for the first three grades are books which may be read to the pupils of those grades by the teacher or be read by the pupils themselves.

Selections to which allusion has been made in the course of study may be found in the books recommended.

Books of Literature (Grades I, II, and III)

Æsop's Fables

Adventures of a Brownie (Mulock)

Alice in Wonderland (Carroll)

Bailey Book (Bailey)

Bible Stories, 2 vols. (Modern Readers' Bible Series)

Blue Fairy Book (Lang)

Child Life in Prose and Verse (Whittier)

Children's Garlands (Patmore)

Child's Garden of Verse (Stephenson)

Christmas All the Year Round (Howells)

Classics in Baby Land (Bates)

Classic Myths (Gayley)
Doings of the Pansy Family (Peck)
Dream Children (Scudder)
Fables and Folk Stories (Scudder)
Fables and Rhymes (Thompson)
Fairy Tales (Anderson)
Fairy Tales (Grimm)
Heart of Oak Series I, II
In the Child's World (Poulsson)
In Mythland (Beckwith)
Kindergarten Stories (Wiltse)
King Kindness (Walls)
Miscellaneous Stories (Ewing)
Nature in Verse (Lovejoy)
Nature Myths (Cooke)
Old Greek Stories (Baldwin)
Old Stories of the East (Baldwin)
Old Stories Retold (Binner)
Old Testament Stories (Houghton)
Open Sesame, vol. I
Poems for Children (Ewing)
Poetry for Children (Eliot)
Poetry for Children (Lamb)
Poetry of the Seasons (Lovejoy)
Rainbows for Children (Child)
Southern Stories for Little Readers (Harcourt)
Stories for Children (Wiggin)
Stories for Children (Lane)
Stories of King Arthur (Hansen)
Story of Milo (Kuck)
Sunshine Land (Thomas)

Books of Information (Grades I., II and III)

All the Year Round, 4 vols. (Strong)
American Life and Adventure (Eggleston)
Aunt Martha's Corner Cupboard (Kirby)
Big People and Little People of Other Lands (Shaw)
Brooks and Brook Basins (Frye)
Child's Book of Nature, Vol. 1 (Hooker)
Friends in Feathers and Fur (Johonnot)
Geographical Nature Studies (Payne)
Grandfather's Stories (Johonnot)
Historic Boys and Girls (Brooks)

Home Geography (Long)
 Learning About Common Things (Abbott)
 Little Folks in Feathers, etc. (Miller)
 Little Folks of Other Lands (Chaplin)
 Little Lucy's Wonderful Globe
 Little People of Asia (Miller)
 Madam How and Lady Why (Kingsley)
 My Saturday Bird Class (Miller)
 Nature Stories (Bass)
 Nature's Byways (Ford)
 Queer Little People (Stowe)
 Rab and His Friends (Brown)
 Seed Babies (Morely)
 Snow Baby (Peary)
 Stories for Children (Hale)
 Stories of Animal Life (Bass)
 Stories of Plant Life (Lane)
 Stories of Colonial Children (Pratt)
 Stories of Massachusetts (Hale)
 Stories Mother Nature Told (Andrews)
 The Wide World

Books of Literature (Grades IV, V and VI)

A Ballad Book (Bates)
 Adventures of Ulysses (Lamb)
 Among the Hills (Whittier)
 Arabian Nights, Stories from
 Ballads and Tales (Golden Rod Books)
 Ballads of New England (Whittier)
 Bible Readings (Schaeffer)
 Bible Stories (Modern Readers Bible Series)
 Biographical Stories (Hawthorne)
 Book of Legends (Scudder)
 Children's Hour etc. (Longfellow)
 Children's Treasury of English Song
 Child Life in Prose and Verse (Whittier)
 Choice English Lyrics (Baldwin)
 Cricket on the Hearth (Dickens)
 Cruise of the Dolphin (Aldrich)
 Fairy Life (Golden Rod Books)
 Fairy Tales (Anderson)
 Fairy Tales in Prose and Verse (Rolfe)
 German Household Tales (Grimm)

Gods and Heroes (Francillon)
Golden Treasury of Songs and Lyrics (Palgrave)
Grandfather's Chair (Hawthorne)
Greek Heroes (Kingsley)
Gullivers Travels (Swift)
Heart of Oak Books (III)
Heroes of Asgard
Hiawatha (Lóngfellow)
Household Tales (Grimm)
Jackanapes (Ewing)
King Arthur and His Court (Greene)
King of the Golden River (Ruskin)
Knights of the Round Table
Lays of Ancient Rome (Macaulay)
Little Daffydowndilly (Hawthorne)
Little Lord Fauntleroy (Burnett)
Merry Adventures of Robin Hood (Pyle)
Myles Standish, The Courtship of (Longfellow)
Nature in Verse (Lovejoy)
New England Legends (Drake)
Nurnburg Stove
Old Greek Folk Stories (Peabody)
Old Greek Stories (Baldwin)
Old Stories of the East (Baldwin)
Old Testament Stories in Scripture Language
Open Sesame Vol. II.
Our Country in Poem and Prose (Persons)
Pied Piper and Other Poems (Browning)
Pilgrim's Progress (Bunyan)
Popular Tales from the Norse (Dasent)
Profitable Tales (Field)
Rab and His Friends (Brown)
Robin Hood, Adventures of (Pyle)
Robinson Crusoe (Defoe)
Round the Year in Myth and Song (Holbrook)
Six Tales from Arabian Nights (Eliot)
Squirrels and Other Fur-Bearers (Burroughs)
Stories of the Iliad and Odyssey (Church)
Stories from Old English Poetry (Richardson)
Swiss Family Robinson (Wyss)
Tanglewood Tales (Hawthorne)
Tales of a Grandfather (Scott)
Tales from Shakespeare (Lamb)

Tent on the Beach (Whittier)
The Birds' Christmas Carol (Wiggin)
The Building of the Ship etc. (Longfellow)
The First Jungle Book (Kipling)
Ulysses, Adventures of (Lamb)
Water Babies (Kingsley)
Wonder Book (Hawthorne)

Books of Information (Grades IV, V and VI)

A Hunting of the Deer (Warner)
American History Leaflets (Hart and Channing)
American Indians (Starr)
American Leaders and Heroes (Gordy)
Animals Wild and Tame (Davis)
Around the World (Carroll)
Biographical Sketches (Hawthorne)
Birds and Bees (Burroughs)
Bird Ways (Miller)
Bird World (Stickney-Hoffmann)
Black Beauty (Sewall)
Book of Legends (Scudder)
Boy's Froissart (Lanier)
Boy's Percy (Lanier)
Boys of '61 (Coffin)
Boys of '76 (Coffin)
Boys of Other Countries (Taylor)
Building of the Nation (Coffin)
Cast Away in the Cold (Hayes)
Children of the Cold (Schwatka)
Children's Life of Abraham Lincoln (Putnam)
Children's Stories of American Literature (Wright)
Child's Book of Nature Vol. 2 (Hooker)
Claws and Hoofs (Johonnot)
Coal and Coal Mines (Green)
Colonial Children (Hart)
Colonial Massachusetts (Dawes)
Curious Homes, etc. (Beard)
Each and All (Andrews)
England's Story (Tappan)
English Historical Tales (Morris)
Explorers and Travelers (Greely)
Fairy Land of Flowers (Pratt)
Fairy Land of Science (Buckley)

Few Familiar Flowers (Morley)
Fifty famous Stories retold (Baldwin)
First Book in Geology (Shaler)
First Book of Birds (Miller)
Five Little Peppers (M. Sidney)
Four American Explorers (Kingsley)
Four Great Americans (Baldwin)
Four Handed Folk (Miller)
Friends and Helpers (Eddy)
From Flower to Fruit (Newell)
From Seed to Leaf (Newell)
Geographical Reader (Scribners)
Geographical Readers (King)
Geographical Readers (Philips)
Girls who became Famous (Bolton)
Grandfather's Chair (Hawthorne)
Greek Heroes (Kingsley)
Greeks and Persians (Cox)
Hans Brinker, etc. (Dodge)
Heroes of History (Towle)
Heroes of the Middle West (Catherwood)
Historical Readers (Gilman)
History of England (Cooke)
History of Rome for Beginners (Shuckburgh)
How Our Grandfathers lived (Hart)
In Brooks and Bayou (Bayliss)
Indian History for Young Folks (Drake)
Information Readers 4 vols.
Little Flower Folks (Pratt)
Little Folks of other Lands (Chaplin)
Old South Leaflets
Old Stories of the East (Baldwin)
Old Times in Colonies (Coffin)
Our Own Birds (Bailey)
Our Fatherland (Carver and Pratt)
Pilgrims and Puritans (Moore)
Pioneers of Land and Sea (McMurry)
Pioneers of the Mississippi Valley (McMurry)
Pioneers of the West (McMurry)
Rome and Carthage (Smith)
Seaside and Wayside (Andrews)
Seven Little Sisters (Andrews)
Sharp Eyes (Burroughs)

Short Stories from English History (Blaisdell)
 Source Book of American History (Hart)
 Source Book of English History (Kendall)
 Squirrels and other Fur Bearers (Burroughs)
 Stories from English History (Church)
 Stories from Plato (Burt)
 Stories from Old Germany (Pratt)
 Stories from the Bible (Church)
 Stories of American History (Eggleston)
 Stories of Animal Life (Holden)
 Stories of Bird Life (Pearson)
 Stories of Colonial Children (Pratt)
 Stories of Great Americans (Eggleston)
 Stories of Greece (Guerber)
 Stories of Our Country (Johonnot)
 Stories of the Old World (Church)
 Stories of the Romans (Guerber)
 Tales of Troy (DeGarmo)
 Ten Boys who lived on the Road from ^{Long Ago} till ^{Now}
 (Andrews)
 Ten Great Events in History (Johonnot)
 The Children's Crusade (Gray)
 The Geographical Story (Dana)
 The Story of the Birds (Baskett)
 True Stories from New England History (Hawthorne)
 Young Folks' History of England (Yonge)
 Young Folks' History of France (Yonge)
 Wigwam Stories (Judd)

Books of Literature (Grades VII and VIII)

Age of Fable (Bulfinch)
 A Man without a Country (Hale)
 As You Like It (Shakespeare)
 Ben Hur (Wallace)
 Bigelow Papers (Lowell)
 Birds and Bees (Burroughs)
 Bunker Hill Orations (Webster)
 Cape Cod (Thoreau)
 Character (Smiles)
 Chirstmas Carol (Dickens)
 Cotter's Saturday Night (Burns)
 Courtship of Miles Standish (Longfellow)
 Cricket on the Hearth (Dickens)

Enoch Arden (Tennyson)
Evangeline (Longfellow)
Giles Corey (Longfellow)
Golden Treasury (Palgrave)
Greek Heroes (Kingsley)
Gulliver's Travels
Hamlet (Shakespeare)
Heart of Oak Books IV-VI
Homer's Iliad
Hunting of the Deer (Warner)
Idylls of the King (Tennyson)
Ivanhoe (Scott)
Jason's Quest (Lowell)
Julius Cæsar (Shakespeare)
Kennilworth (Scott)
Knickerbocker's Stories (Irving)
Lady of the Lake (Scott)
Lay of the Last Minstrel (Scott)
Light of Asia (Arnold)
Magna Charta Stories (Gilman)
Marmion (Scott)
Midsummer Night's Dream (Shakespeare)
Mill on the Floss (Eliot)
My Hunt after the Captain (Holmes)
Open Sesame vol. III
Patriotic Reader (Carrington)
Peasant and Prince (Martineau)
Poor Richard's Almanac (Franklin)
Rasselas (Johnson)
Selections from the Alhambra (Irving)
Selections from Ruskin
Self Help (Smiles)
Sesame and Lilies (Ruskin)
Seven American Classics (Swinton)
Silas Warner (Eliot)
Sir Roger De Coverley (Addison)
Sketch Book (Irving)
Snow-Bound (Whittier)
Sohrab and Rustum (Arnold)
Stories from Classic Literature (Palmer)
Tale of Two Cities (Dickens)
Tales from Shakespeare (Lamb)
Tales of a Grandfather (Scott)

Tales of a Wayside Inn (Longfellow)
Tales of the White Hills (Hawthorne)
Toilers of the Sea (Hugo)
The Seasons (Thompson)
The Second Jungle Book
The Talisman (Scott)
Tom Brown's School Days (Hughes)
Twice Told Tales (Hawthorne)
Two Years Before the Mast (Dana)
Uncle Tom's Cabin (Stowe)
Vicar of Wakefield (Goldsmith)
Vision of Sir Launfal (Lowell)
Webster's Orations

Books of Information (Grades VII and VIII)

Adrift in the Ice Fields (Hall)
American Boys' Handy Book (Beard)
American Explorers (Higginson)
American Girls' Handy Book (Beard)
American History Told by Contemporaries (Hart)
Among the Law Makers (Alton)
Arctic Alaska and Siberia (Aldrich)
A Trip across the Continent (Lummis)
Autobiography (Franklin)
Benjamin Franklin (More)
Boyhood in Norway (Boynton)
Boy Travelers (Knox)
Building of the Nation (Coffin)
Bulfinch's Age of Chivalry (Hall)
Bulfinch's Age of Fable (Hale)
Camp and Firesides of Revolution (Hart)
Captains of Industry (Parton)
Child's Book of Nature Vol. 3 (Hooker)
Child's History of England (Dickens)
English History for Beginners (Higginson)
Ethics of Success (Thayer)
Feats on the Fiord (Martineau)
Fifteen Decisive Battles (Creasey)
Footprints of Travel (Ballou)
Great American Industries
Hawaii and its People (Twombly)
Life and her children (Buckley)
Life of Washington (Fiske-Irving)

Life of Washington (Scudder)
Madam How and Lady Why (Kingsley)
Marco Polo (Towle)
Modern Europe (Badlam)
My Summer in a Garden (Warner)
Old Stories of the East (Baldwin)
Our American Neighbors
Paul Jones (Hapgood)
Pepacton (Burroughs)
Plutarch's Lives
Sea and Land (Shaler)
Sharp Eyes (Burroughs)
Side Lights on American History (Elson)
Stoddard's Lectures
Stories from Classic Literature (Palmer)
Stories of the War (Hale)
Story of a Grain of Wheat (Edgar)
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Zig-Zag Journeys (Butterworth)

General Plans of Studies for High Schools

APPENDIX H.

The difficulties in the way of making a course of studies for a single high school that will meet the needs of all the pupils are very apparent.

In Germany and in some of the larger cities of this country, the difficulties are partially met by separating the instruction offered into two or more departments and by designating each department as a separate school. Thus we have in some places two or more of the following kinds of schools: English high school, Classical high school, Manual Training high school, Commercial high school. In the smaller cities and large towns but one high school is maintained, having several departments or courses such as: General, English, college preparatory, scientific, mechanical, commercial.

In the smallest schools it will be found necessary to limit the courses to two or three. In such schools it may be found best to offer as many subjects as possible, with the understanding that pupils may select a given number with a maximum and minimum limit.

All of the following plans except the first are based upon plans in successful operation in var-

ious kinds of high schools. If adopted they should in each case be supplemented by brief bulletins for the guidance and assistance of teachers. The bulletins should be in the form of suggestions relating to the order and kind of topics to be presented, together with some hints as to the purpose and means of carrying on the work of each subject. Some statement of methods of teaching might also be made including such subjects as topical teaching, methods of questioning and giving of tasks.

YEAR	Plan proposed by the Committee of Ten for a large High School. Singing and Drawing to be supplied.				
	CLASSICAL COURSES. THREE FOREIGN LANGUAGES. ONE MODERN	LATIN—SCIENTIFIC COURSES TWO FOREIGN LANGUAGES (ONE MODERN)	MODERN LANGUAGE COURSES (BOTH MODERN)	ENGLISH COURSE ONE FOREIGN LANGUAGE (ANCIENT OR MODERN)	
1st	Latin	5 Latin	5 French or German	5 Latin or German or French	5
	English	4 English	4 Algebra	4 English	4
	Algebra	4 Algebra	4 History	4 Algebra	4
	History	4 History	3 Physical Geography	4 History	4
2nd	Physical Geography	3 Physical Geography	3 Physical Geography	3 Physical Geography	3
	Latin	5 Latin	5 French or German	4 Latin or German or French	5 or 4
	English	2 English	2 English	3 English	3 or 4
	German or French	4 German or French	4 German or French begun	5 Geometry	3
3rd	Geometry	3 Geometry	3 Geometry	3 Physics	3
	Physics	3 Physics	3 Physics	3 History	3
	History	3 Botany or Zoology	3 Botany or Zoology	3 Botany or Zoology	3
	Latin	4 Latin	4 French or German	4 Latin or German or French	4
4th	Greek	5 English	3 English	3 English	5
	English	3 German or French	4 German or French	4 Math. Algebra	2
	German or French	4 Math. Algebra	2 Math. Algebra	2 Astronomy $\frac{1}{2}$ yr. }	2
	Math. Algebra	2 Geometry	2 Geometry	2 Meteorology $\frac{1}{2}$ yr. }	2
5th	Geometry	2 Astronomy $\frac{1}{2}$ yr. }	2 Astronomy $\frac{1}{2}$ yr. }	4 Meteorology $\frac{1}{2}$ yr. }	3
	2	4 History	4 History	3 History	4
	Latin	4 Latin	4 French or German	3 Latin or German or French	4
	Greek	5 English as in Classical	2 English	4 English	4
6th	English	2 Additional	2 German or French	4 Chemistry	3
	German or French	3 Chemistry	3 Chemistry	3 Trigonometry and Higher Algebra	3
	Chemistry	3 Trigonometry and higher Algebra or History	3 Trigonometry and higher Algebra or History	3 History	3
	Trigonometry and higher Algebra or History	3 Geology or Physiol. $\frac{1}{2}$ yr. }	3 Geology or Physiol. $\frac{1}{2}$ yr. }	3 Geology or Physiol. $\frac{1}{2}$ yr. }	3

The figures at the right of subjects indicate the number of periods weekly. At least five of the twenty periods weekly should be given to unprepared work. Laboratory subjects should have double periods, when possible.

II

YEAR	ENGLISH	A plan of Studies with five Courses and few Electives.		LITERARY	Arranged by terms of five months each.*		COMMERCIAL
		LATIN			MANUAL TRAINING		
	Algebra Freehand Drawing English	Latin Algebra Freehand Drawing English	Algebra Freehand Drawing English	Algebra Freehand Drawing English	Freehand Drawing and Bench Work Latin or Eng. Grammar Algebra English	English Algebra Freehand Drawing	
1st	Algebra Ancient and Greek English	Latin Algebra Ancient and Greek History English	Algebra Ancient and Greek History English	Algebra Ancient and Greek History English	Freehand Drawing and Wood Turning Latin or Eng. Grammar Algebra English	Pensmanship and Elementary Bookkeeping Algebra Ancient and Greek History	
2nd	Physical Geography Roman History Plane Geometry English	Cæsar Roman History Plane Geometry English	German or French Roman History Plane Geometry English	German or French Medieval History Plane Geometry English	Mechanical Drawing & Cabinet Work Language or History Plane Geometry English	Commercial Arithmetic English Roman History, Language, Geometry Physical Geography Commercial Arithmetic	
	Physical Geography Medieval History Plane Geometry English	Cæsar Medieval History Plane Geometry English	German or French Medieval History Plane Geometry English	German or French Medieval History Plane Geometry English	Mechanical Drawing and Cabinet Work Language or History Plane Geometry English	Commercial Arithmetic English Medieval History, Language, Geometry Physical Geography	
3rd	Com'l Geography Physics or Botany Modern History English	Cicero Physics or Botany Modern History English	German or French Modern History Physics or Botany English	German or French Modern History Physics or Botany English	Machine or Architectural Drawing & Pattern Work Language or History Physics or Botany English	Commercial Geography English Physics, Botany, Modern History, Language Adv. Bookkeeping Commercial Geography and History of Commerce	
	Commerce'l Geography English History Physics or Botany English	Cicero English History Physics or Botany English	German or French English History Physics or Botany English	German or French English History Physics or Botany English	Machine or Architectural Drawing and Metal Work Language or History Physics or Botany English	Commercial Geography English Physics, Botany, Eng. History, Language, Adv. Bookkeeping	

ENGLISH	LATIN	LITERARY	MANUAL TRAINING	COMMERCE
U. S. History Political Economy or Advanced Algebra Chemistry English Literature	Vergil †Chemistry Adv. Algebra or U. S. History Chemistry English Literature or Chemistry	German or French Chemistry Adv. Algebra or U. S. History English Literature	Machine or Architectural Drawing Language or Pol. Economy Chemistry Advanced Algebra English Literature	Business Composition and Literature Civics †Chemistry, Advanced Algebra, U. S. History, Language, Eng. Literature, Stenography and Typewriting
Civics or Solid Geom. Chemistry English Literature Composition	Vergil Civics or Solid Geom. English Literature or Chemistry †Composition or Chemistry	German or French Civics or Solid Geom. English Literature Composition or Chemistry	Machine or Architectural Drawing Language or Civics Solid Geometry Composition or Chemistry	Business Composition and Literature Commercial Law †Chemistry, Solid Geometry, Political Economy, Language, Eng. Literature, Advanced Stenography and Typewriting

4th

NOTES.—Pupils in the Latin course may take German or French, instead of studies marked thus:†
Pupils in the English, Latin and Literary courses may take a modern language in the second year in place of Plane Geometry; in the third year in place of Physics or Botany; in the fourth year in place of Advanced Algebra, U. S. History, Civics, Solid Geometry, or Political Economy. Pupils must take TWO of the subjects marked thus:‡

- NOTES.—(a) English means English language and literature.
 (b) Language means German or French or Latin.
 (c) Students who take a language must complete a year of English Grammar.
 (d) Students who take Physics must complete Plane Geometry.
 (e) Four studies are required each term.

* A plan based upon the course followed in the Minneapolis, Minn. High Schools.

III

Proposed Plans offering choice of Courses with few electives in any Course. It is intended for a High School having fifteen or more teachers.*

YEAR	COLLEGE PREPARATORY	GENERAL WITH LATIN	GENERAL WITH FRENCH	COMMERCIAL
1st	English History Latin II. Algebra Drawing Ele. Science	3 3 4 4 2 2	3 3 4 4 2 2	3 3 4 4 5 2
2nd	English History Latin III. Greek or German Geometry Drawing	3 3 5 5 3 1	3 3 5 4 3 1	4 3 4 4 3 1
3rd	English History Latin IV. Greek or German French Algebra	2 3 4 4 4 3	5 3 4 4 3 3	4 3 4 4 4 4
4th	English Latin V. Greek or German French Physics or chemistry or U. S. History Geometry	2 4 4 4 4 3	5 3 4 4 4 4	5 3 4 4 4 6

Singing is required of all pupils once a week.

Pupils preparing for a Technical School may take physics vice Latin in the third year of the College Preparatory Course and Solid Geometry vice Latin in the fourth year of the same course.

The figures at the right of subjects indicate the number of lessons weekly.

* A plan based upon the Course followed in the New Bedford, Mass. High School

V

A plan of Studies arranged in three Courses for four and five years and adapted for schools of medium size.*

		GENERAL		TECHNICAL		COLLEGE PREPARATORY	
YEAR		FOUR YEARS	FIVE YEARS	FOUR YEARS	FIVE YEARS	FOUR YEARS	FIVE YEARS
1st	English	3	English	English (Anc.)	3	English	3
	History (Anc.)	2	History (Anc.)	Algebra	2	History (Anc.)	3
	Algebra	4	Algebra	Physics	4	Algebra	3
	Physics	4	Physics	{ Latin	2	Physics	4
	Manual Training 10†	5	{ or	{ Manual Training 10†	4	Latin	2
2nd	Business { Correspondence }	5	{ Manual Training 10†	Drawing 1†	5		4
	Arithmetic	5	Drawing 1†		4		
	Com'l Geog.	3	English	German	3		
	Physical Geog. and Botany	4	German	Geometry	4		
	Drawing 1†	3	Geometry	{ Latin	3	English	3
3rd	English	3	{ or	{ Manual Training 10†	5	{ German	4
	German	4	Manual Training 10†	Drawing 1†	4	or	3
	Bookkeeping 4†	3	Chemistry	Chemistry (optional)	3	Geometry	5
	Geometry	3	English			Latin	
	Latin	5	German				
4th	Chemistry	5	English				
	Manual Training 10†	3	Latin (optional)				
	Stenography 4, Typewriting 3†	5	{ Chemistry				
	Drawing 1†	3	or				
	English	3	Botany, etc.				
5th	German	4	{ Manual Train. 6†3				
	History (Eng.)	2	Algebra				
	Latin	5	History Anc.				
	Stenography, 4 Typewriting 3†	5	Drawing 4†				
	Chemistry	3					
6th	Botany and Physiol. or Zool.	4					
	Bookkeeping and Com'l Law 4†	3					
	Manual Training 6†	2					
	Drawing 4†	2					

VII

*A place for small high schools having two or three teachers.**

Subjects printed in italics are elective.

Figures in parenthesis indicate the number of periods without recitation.

YEAR	SUBJECTS	PERIODS WEEKLY	YEAR	SUBJECTS	PERIODS WEEKLY
1st	English	3 (1)	2nd	English	3 (1)
	Elementary Physics $\frac{1}{2}$ yr.	4		English History	3 (1)
	Elementary Chemistry $\frac{1}{2}$ yr.			Geometry	3 (1)
	Ancient History	3 (1)		Latin	3 (2)
	<i>Algebra</i>	4 (1)		<i>Elementary, Chemistry</i> $\frac{1}{2}$ yr.	3 (2)
	<i>Latin</i>	1 (1)		<i>Botany</i> $\frac{1}{2}$ yr.	
	<i>Drawing</i>	3 (2)		<i>Bookkeeping</i> $\frac{1}{2}$ yr.	3 (1)
<i>Bookkeeping</i>		<i>Commercial Geography</i> $\frac{1}{2}$ yr			
EACH PUPIL TO ELECT AT LEAST EIGHT PERIODS.			EACH PUPIL TO ELECT AT LEAST TWELVE PERIODS.		
3rd	English Literature	3	English Literature	3 (2)	
	Composition and Grammar	1 (1)	Composition and Grammar	1 (1)	
	U. S. History and Civil Government	3	Latin	3 (2)	
	<i>Latin</i>	3 (2)	<i>French</i>	3 (2)	
	<i>French</i>	3 (1)	<i>Adv. Physics</i> $\frac{1}{2}$ yr.	2 (2)	
	<i>Physiology and Hyg.</i> $\frac{1}{2}$ yr.	<i>Astronomy</i> $\frac{1}{2}$ yr.			
	<i>Geology</i> $\frac{1}{2}$ yr.	3 (1)	<i>Solid Geometry</i> $\frac{1}{2}$ yr.	3 (1)	
	<i>Commercial Arithmetic</i>		<i>Advanced Algebra</i> $\frac{1}{2}$ yr.		
	<i>Geometry</i> $\frac{1}{2}$ yr.	3 (1)	<i>Drawing</i>	2 (1)	
	<i>Trigonometry</i> $\frac{1}{2}$ yr.	3 (1)	Any subject of previous years not taken		
EACH PUPIL TO ELECT AT LEAST THIRTEEN PERIODS.			EACH PUPIL TO ELECT AT LEAST EIGHTEEN PERIODS		

* Based upon a Course planned by James W. MacDonald, agent of Massachusetts State Board of Education.

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